Virginia Wildlife

JULY 1979
$1.00

Virginia Wildlife

VIRGINIA WILDLIFE (ISSN 0042-6792)
July, 1979, Volume XL, No. 7

Dedicated to the Conservation of Virginia's Wildlife and Related Natural Resources

COMMONWEALTH OF VIRGINIA
JOHN N. DALTON, GOVERNOR

Commission of Game and Inland Fisheries

COMMISSIONERS

James R. Knight, Jr., D.D.S., Chairman, *Warsaw;* J. D. Bowie, Vice Chairman, *Bristol;* Frank F. Everest, Jr., *Alexandria;* Dolph Hays, *Arlington;* Allan A. Hoffman, M.D., *Danville;* Walter J. Leveridge, *Virginia Beach;* John P. Randolph, *Colonial Heights;* Richard E. Watkins, *Richmond;* Ralph L. Weaver, *Waynesboro;* William H. West, *Upperville.*

ADMINISTRATIVE OFFICERS

James F. McInteer, Jr., *Executive Director;* Richard H. Cross, Jr., *Assistant Director;* Jack W. Raybourne, *Chief, Game Division;* Harry L. Gillam, *Chief, Education Division;* Jack M. Hoffman, *Chief, Fish Division;* John H. McLaughlin, *Chief, Law Enforcement;* James Engle, *Chief, Lands and Engineering;* Sam J. Putt, *Chief, Administrative Services.*

Virginia Wildlife is published monthly in Richmond, Va. by the Commission of Game and Inland Fisheries, 4010 W. Broad St. All magazine subscriptions, changes of address and inquiries should be sent to PO Bx 11104, Richmond, Va. 23230. The editorial office gratefully receives for publication news items, articles, photographs and sketches of good quality which deal with Virginia's soil, water, forests and wildlife. The Commission assumes no responsibility for unsolicited manuscripts and illustrative material. Credit is given on material published. Permission to reprint text material is granted provided credit is given the Virginia Commission of Game and Inland Fisheries and *Virginia Wildlife,* but clearance should also be obtained from contributing free-lance writers, artists and photographers to reproduce their work.

SUBSCRIPTIONS: One year, $5, three years, $12.50. Make check or money order payable to Treasurer of Virginia and send to: Commission of Game and Inland Fisheries, P.O. Box 11104, Richmond, Virginia, 23230.

Observations, conclusions and opinions expressed in *Virginia Wildlife* are those of the authors and do not necessarily reflect those of the members or staff of the Commission of Game and Inland Fisheries.

Special Second Class Postage paid in Richmond, Va.

Features

4 RAPPAHANNOCK LARGEMOUTHS, by Mike Pane
A Little-Known Hot Spot

6 BACK TO BEANS, BACON AND BISCUITS, by John Traister
A Revival of the Old Basics

9 IN SEARCH OF THE WILD FALCON, by Claudia T. Bagwell
The Excitement of Falcon Banding

12 HUNTING THE EASTERN WOODCHUCK, by Juanita Colvin
You Can Elevate it to a Fine Art

14 TRAINING YOUR DOG, by Charles D. Bays
What is the Most Important Aspect of Training ?

17 THE CENTRAL BLUE RIDGE, by Frank Hanenkrat and Ruskin S. Freer
The Geology of the Central Blue Ridge

20 FLY FOR A SUMMER'S DAY, by A. G. Eastby
Grasshoppers Can Have a Powerful Effect

25 SERENGETI ON THE SHENANDOAH, by Dinny Slaughter
Some Exotics in Virginia

33 IN NATURE'S GARDEN, by Elizabeth Murray
Coral-Honeysuckle

34 BIRD OF THE MONTH, by John W. Taylor
The Yellow Warbler

Departments

3 Editorial/Letters
23 Growing Up Outdoors
24 It Appears to Me
28 Personalities
29 Outdoor Notebook
32 On the Waterfront

Staff

HARRY L. GILLAM, *Editor*
MEL WHITE, *Associate Editor*
SANDRA COLEMAN, *Assistant Editor*
ROBIN SHARPE, *Art Director*
MICHAEL RICE, *Production Assistant*
CARL "SPIKE" KNUTH, *Artist and Photographer*
F. N. SATTERLEE and J. N. KERRICK, *Staff Writers*

COVER: Louisiana Heron, by Rockne Knuth, Fond du Lac, Wisconsin

Editorial

A NON-HUNTER SPEAKS AND THE EDITOR REPLIES

To the Editor:

After reading and enjoying your fine magazine for a number of years, I would like to compliment the staff and writers of *Virginia Wildlife* for an excellent product. Particularly gratifying is the diversity and quality of the many articles.

I do however, have a single reservation. It is obvious that some of the staff, in particular the editorial writers, are most concerned about hunting and hunters. Perhaps with good reason, but a lack of balance becomes apparent after several issues.

My letter is intended to act as a balance and perhaps an initiative for a forum between outdoor persons about hunting. At the beginning, I will admit that I do not hunt (I did when I was young). I believe that hunting for food is moral and hunting for pleasure is immoral. In my opinion, killing an animal to satisfy a primitive instinct is a weak argument for an intelligent human being.

I suppose that if there were no "slob" hunters, that a sort of peaceful coexistence would exist between hunters and non-hunters. Since that is not the case and since many publications such as yours tend to publish reason and rationale for hunting. I would, in turn, like to examine some of these in this letter.

1. Hunters are performing a valid function by trimming or "harvesting" game animals as to prevent overpopulation and subsequent starvation.

If this claim were valid, why is it that of all the thousands of animal species in this world that hunters choose to "save" the game species? Why are the hunters so concerned about deer herds and bears and yet, at the same time, completely unconcerned about species such as beaver and skunks? Of all the animals in this country that are either extinct or nearly so, none that I know of arrived in that condition as a result of overpopulation, although I believe quite a few such as the bison and pigeons were done in by very traditional hunters. The fact of this matter is that all animal life, including mankind will tend to overpopulate in cycles, but that mother nature has various ways of correcting inbalances such as predators and starvation. Neither is "nice" by anyone's standards but at least the weak, diseased and lame are the first to go under mother

Continued on page 16

Letters

SNAKE BITE CONTROVERSY

The author of "Snake-Opoly" (May) is to be congratulated for the most part on an article well written and informative. However, there is one point with which I must disagree. John Beard recommends packing an area where bitten in ice and tying a constricting band above the bite before going to a hospital. Most physicians disagree today and recommend incision and suction as the best emergency treatment for snakebite. The issue has been debated for many years and there is still disagreement. There is a school of though that packing in ice might even be harmful.

W. Kirkland Ruffin
Charlottesville

Answer: We received several letters stating this opinion. Our author, John Beard, stands with his original statement, however. Improper cold treatment can freeze tissue causing frostbite and even gangrene. Improper cutting and suction also has its hazzards.—Asst. Ed.

SUCCESSFUL KESTREL PROJECT

In the April, 1978 issue of your magazine there was an article on how to build a house to attract kestrels. I followed your instructions and the house has been a success. This year a pair of kestrels have taken up residence in my house and I am delighted with the prospect of raising a nestful of beautiful hawks. Thank you for a fine addition to my backyard.

James W. Bagby, M.D.
Saint Louis, Missouri

PRAISE FOR SNAKE-OPOLY

I would like to congratulate you on your May 1979 snake I.Q. quiz by John Beard. The article was well-written and informative.

Mark Rigney
Woodbridge

ELIZABETH MURRAY FAN

I have a suscribed to *Virginia Wildlife* for many years and always enjoy it. A favorite column of mine is "In Nature's Garden." After its absence for some months, I was delighted to see it reappear. The column is informative and very helpful to those interested in plant life.

James W. Eike
Fairfax

FLORIDA FAN

I would like to complement you and your staff for the fine job you are doing with the *Virginia Wildlife* for which I have been a subscriber for about 30 years. I am a native Virginian transplanted to Florida. I have enjoyed many articles in your magazine and have planned numerous trips to Virginia from them.

George R. Daughty
St. Petersburg, Florida

Rappahannock Largemouths

By MIKE PANE

This river is a little-known largemouth hot spot.

A lot of fishermen know the Rappahannock River. Smallmouth bass fishermen know it offers some of the best river fishing for this species in Virginia. Shad fishermen know that the spring run can be fantastic. Cat-fishermen know they can almost count on the Rap for hefty stringers of channel cats. And other fishermen know about the excellent fishing in the lower river for spots, perch, hardheads, rockfish and blues. One thing most Virginia fishermen don't know about the Rappahannock is that it is also a top notch largemouth bass river. Sure they all know about the Chickahominy, the James and even the Pamunkey. It's about time the Rappahannock got its due.

I've been fishing the Rap for two years now, and have guided bass fishermen for about a year on the river. Some of the stringers I've seen have proven to me that this river is one of the best spots for largemouth north of Buggs Island. For instance, I know a bass club that held a tournament last year on Occupacia Creek, one of the Rappahannock's best spots. Eleven fishermen weighed in 111 pounds of largemouth. That's a good catch in any body of water, much less one within easy driving distance of most of Virginia's major population centers.

The best largemouth fishing is found in two areas: the Leedstown area and the Tappahannock area. To fish the first, you launch your boat (bass fishing from the bank is nearly impossible) at the private campground on State Route 638 for a $2 fee. Best fishing from here seems to be in the river itself all the way to Port Royal upstream and downstream to about the mouth of Occupacia Creek. To fish the second area, you put in at the town of Tappahannock, either at the public ramp at the foot of the bridge crossing the river to Warsaw or at the public ramp on Hoskins Creek. I recommend the one on Hoskins Creek — it's a better ramp.

If you fish out of Tappahannock, the best bassing is found in the creeks that flow into the river: Totusky, Cat Point and Pee Dee on the north side of the river and Piscataway, Hoskins, Mount Landing and Occupacia on the south side. Very few good bass are taken directly out of the river this far downstream.

Best times to fish are April through June and from about the middle of September through the middle of November. Some nice stringers can be caught during midsummer, but you can't really count on them.

By far the best baits for me have been the plastic worm and the spinnerbait. I prefer blue or purple Shimmy Gal worms, rigged weedless with about a ¼-ounce slip sinker on a heavy worm outfit with 17-pound test line. For spinnerbaits, I like either black or chartreuse single-spin in the same colors for buzzing. I usually add a white Scally Wag to the chartreuse spinnerbait and a yellow one to the black spinnerbait. These are Creme's version of the twister-tail grubs, and they seem to add something to the lure's attractiveness. Other lures that have worked well for me are silver Mepps spinners, black Little Georges, jointed Rebels and Mudbugs. The Rappahannock is always at least a little muddy in the largemouth areas, so plan to use those lures and colors that work best for you in that kind of water.

Try working those fallen trees where there is relatively shallow water, and where the tide doesn't leave the bank high and dry when it goes out. Scout the areas at dead low tide and remember which trees are still in the water. Trees left high and dry will not have any fish on them when the tide comes back in. Best bait to use in fallen trees is the plastic; the spinnerbait a close second.

Another spot to fish hard in spring and fall are lily pads. At certain times I can buzz a spinnerbait through the pads and come up with some real whoppers. One day last spring my wife, Ginny, and I caught a stringer of 11 bass. Three were over seven pounds, and two others over five. All were taken buzzing a chartreuse Sure Slayer spinnerbait with a white grub through the pads.

Sometimes on a fast falling tide we've found concentrations of largemouths in the mouths of guts that drain the swamps. They were always feeding heavily on bait fish washed out of the swamps by the rapid current. A spinnerbait, Mepps or Rebel, tossed up the gut and worked out can be deadly.

During the spring spawning period, the biggest factor in finding the fish is the current. Usually bass won't spawn on a muddy bottom unless they have to, but in the river they will pass up a sand or gravel bottom where there is a heavy current and will spawn on a mud bottom where there is little or no current. Many times the mud bottom has an underlying layer of gravel or sand that the bass get to when they make their bed, but the current is the deciding factor. They can't make their beds on the down-current side of obstructions like they would in a regular stream or river because the direction of the current changes about every six hours with the tide change.

In midsummer I like to fish where a shallow flat drops into about 10-15 feet of water. Bass seem to hold along the edge of the drop-off. In early morning and late evenings, I cast spinnerbaits around visible cover in shallow water. This is the next hardest time of year to fish the river, but the fish are there for those who can stand the heat.

Midwinter is the hardest time of year to fish the Rap. Not only is it cold, but fish are very difficult to find. Usually a week of fairly warm, sunny weather will bring some fish into the shallows near the bank where they will go on a feeding spree, but these conditions are few and far between. I don't spend much time on the river in midwinter as I find it easier to find schools of bass in reservoirs at this time.

Fall is another matter. As soon as the nights start to cool off, Rappahannock largemouths start feeding. Often, you can find fish almost anywhere you cast, but I prefer moderately shallow water and a subsurface spinnerbait. At times, a Rebel twitched on the surface in quiet pockets of water will result in plenty of excitement.

Back To Beans, Bacon

Reviving the Three B's can simplify your camping trips.

BY JOHN TRAISTER

The old Three B days – when campers depended on a steady diet of beans, bacon, and bannock (skillet bread) —sound rather dull compared to the wide variety of freeze-dried, canned, and frozen foods available to the camper today. However, if one would look into the matter a little further, there are numerous variations on the Three B's that would whet even the most particular eater's appetite. Add to this the ability of these items to keep almost indefinitely; the availability of them in almost every small and large store in the country; the relatively low cost (as compared to freeze-dried camp foods) and we have reason enough to take another look, and perhaps even revive the days of the Three B's – at least to some extent.

Regardless of your mode of transportation, weight is always an important factor when considering your grubstake. Granted, more consideration has to be given if you're backpacking or canoeing, but even in a travel trailer or RV, space and weight is still important. So let's make a comparison of the Three B's to the equivilent modern camp food to sustain two people, say, for one week.

Freeze-Dried Food

Breakfasts	Meals Served	Weight	Cost
Orange drink eggs, hash browns, etc.	2	1 lb. 3 oz.	5.29
Cheese Omelette, fruit, etc.	2	1 lb. 2 oz.	5.25
Eggs, Bac-O-Bits, etc.	2	1 lb. 3 oz.	5.29
Granola & blueberries	1		1.30
Lunches			
Miscellaneous snacks	7	77 oz. (average 11 oz.	15.77
Dinners			
Beef Stroganoff, etc.	2	1 lb. 4 oz.	5.79
Chicken & Rice, etc.	2	1 lb. 6 oz.	5.75
Beef Stew, etc.	2	1 lb. 3 oz.	5.95
Chili with Beans	1		2.99
Regular coffee			1.75
Sugar			.50
Coffee Creamer			.25
		13 lbs. 9 oz.	$55.88

All of the above freeze-dried meals are complete with drink, main course, and dessert. Coffee, cream, and sugar are the only items purchased in addition to the freeze-dried packages.

Before listing the comparison for the Three B's let's define some of the ingredients. First of all, by "beans," we mean all of the various kinds of dried beans (kidney, lima, pinto, etc), lentils, split peas, and rice. The bacon we are speaking of is cured slab bacon that is cured with salt and smoke. The "bannock" is made from flour, but we'll include all of the bread mixes like pancake mixes, cornbread, cake, etc.

The Three B's et al

Item	Weight	Cost
Slab Bacon	5 lbs.	5.45
Flour	2 lbs.	.50
Bisquick	1 lb. 4 ozs.	.60
Pancake Mix	1lb.	.65
Assorted Dried "Beans"	3 lbs.	1.50
	12 lbs. 4 ozs.	8.70

This is our basic Three B assortment, but unlike the complete meals of the freeze-dried packages, other ingredients will have to be added to this list; that is, seasoning and drink mixes along with a few other miscellaneous items. The following list will suffice for the recipes that will follow later:

& BISCUITS

Salt	¼ lb.	.05
Sugar	1 lb.	.50
Chili Powder	1½ lb.	.53
1 pack (12 servings) cocoa mix	12 oz.	1.39
1 can dark molasses	12 oz.	.89
Regular ground coffee	8 oz.	1.75
Coffee creamer	2 oz.	.25
Butter (canned or fresh)	1 lb.	1.20
Dried fruit	2 lbs.	2.00
Onions	8 oz.	.10
Fermented bean sauce	3 oz.	.50
Orange drink mix	4 oz.	.79
2 cans mixed nuts	8 oz.	2.00
7 candy bars	8 oz.	1.40
cheese	2 lbs.	2.00
Powdered milk	2 lbs.	2.00
Pepper	1 oz.	.25
	13 lbs. 8 oz.	$17.60

This added to the basic grub list comes to a total weight of 25 pounds, 12 ounces – about double the weight of the freeze-dried food. However, the total cost of the Three B items was only $26.30 – less than half the cost of the freeze-dried items. Still, for backpacking, each person would only be carrying about 13 pounds of food for a week's grub supply. In a travel trailer or RV, the additional weight would make little difference at all.

Here are some menus for the grub list just mentioned for the Three B's. Of course, they can be varied to suit your own taste, and you'll no doubt get some ideas of your own after reading through the recipes.

Breakfast – 1st day: coffee, stewed fruit, bacon, hot biscuits, red eye gravy, molasses.

Begin by making the coffee and frying two slices of bacon. . saving the grease. While the coffee and bacon are cooking, mix two cups of Bisquick mix and 1 cup of cold water until a soft dough forms. Gently smooth the dough into a ball on a floured surface and knead about 5 times; pat or roll the ball flat to a thickness of about ½ inch thick. Cut with a floured 2 inch cutter, or if you're camping, use the rim of a coffee cup for the cutting.

By this time, the bacon should be done, so take up the bacon, lay the slices on a paper towel before placing the dough rounds on an ungreased cookie sheet, camp oven, etc. to bake. You can also place two handfuls of dried fruit in a pan, cover with water, and begin stewing this.

While the biscuits are baking and the fruit is cooking, prepare the red-eye gravy by pouring all but two tablespoons of the bacon drippings out and then blend 1 tablespoon of flour with them. Add one cup of your prepared coffee to the blended mixture and continue to stir constantly while you season to taste with salt and pepper, and add the bacon.

Serve the gravy immediately over the hot biscuits (which should be done by now), serve the stewed fruit, and pour the coffee. You may also have the last biscuit or so with molasses if you have a sweet tooth.

Lunch – 1st day: Snack on the mixed nuts, dried fruit, and chocolate bars. If you had any biscuits left over from breakfast, eat them with cheese or molasses.

Dinner – 1st day: Wash one cup of dried lima beans, put in a pot, cover with water and bring to a boil. Cut off a few slices of bacon from the slab and place in the pot along with any of the bacon grease left over from breakfast. Make sure you have plenty of water in the pot (somewhat like a soup) and then season to taste with salt and pepper. Let the beans simmer for about 2 or 2½ hours.

When the beans are done, raise the heat while you mix 2/3 cup milk with 2 cups of Bisquick mix until the mixture is smooth. Then drop the mixture by spoonfuls onto the boiling beans. Continue cooking the mixture uncovered for ten minutes and then cover and cook another 10 minutes. Serve the beans and dumplings in bowls and prepare milk, cocoa, or coffee for drinks.

A shortcake can be prepared for the evening desert. Mix 2-1/3 cups Bisquick, 3 tablespoons sugar, 3 tablespoons sugar, 3 tablespoons of butter (melted) and 1/2 cup milk until all ingredients are blended. Spread the dough on a floured surface and knead about 10 times before rolling the dough to about 1/2 inch thick. Cut with a dough cutter or coffee cup and bake on an ungreased cookie sheet. You can top this with molasses, swectened stewed fruit, or any sweetened wild berries you may happen to find around your campsite.

Breakfast – 2nd day: orange drink, coffee, pancakes, bacon.

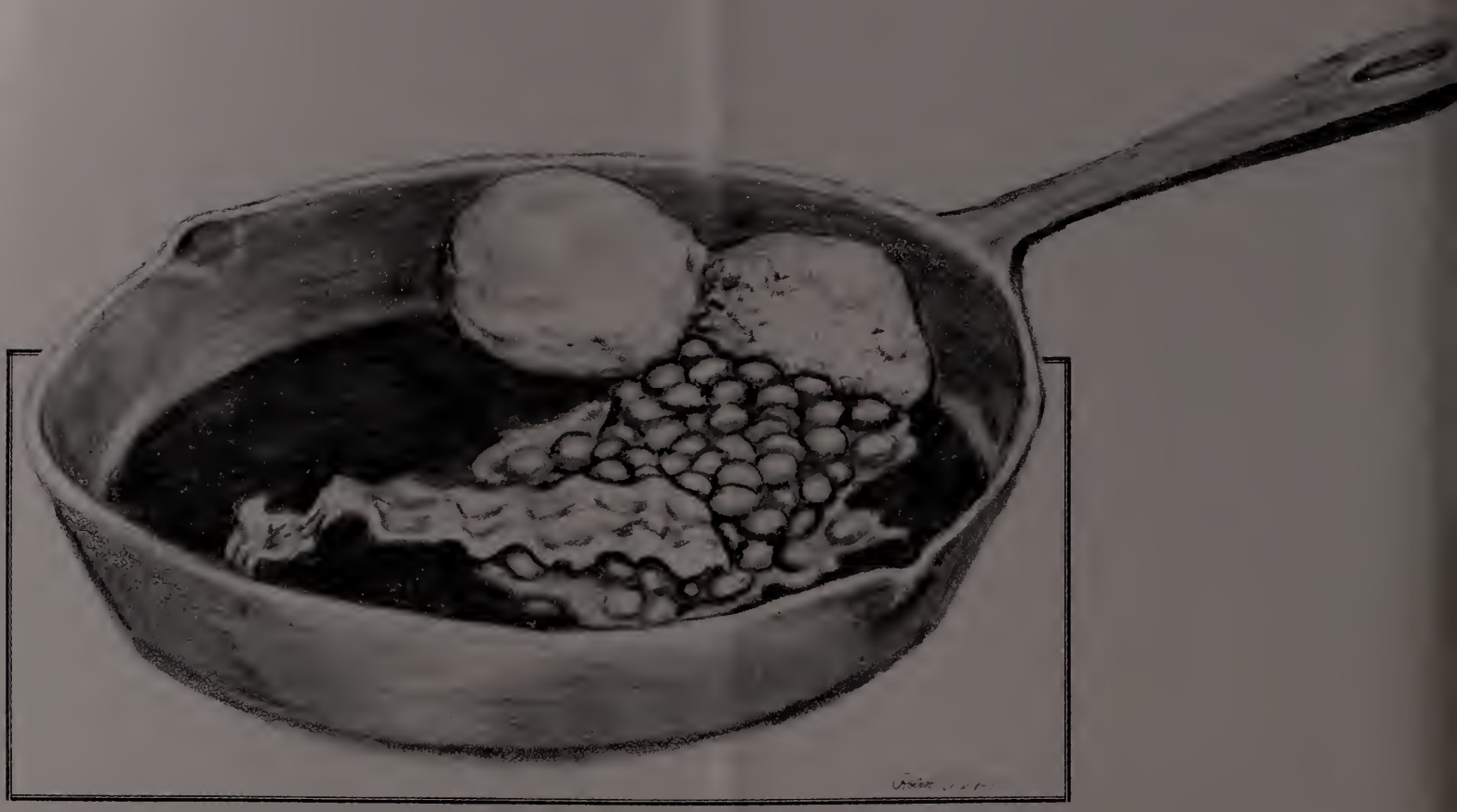
Start the coffee and bacon cooking while preparing the pancake mix according to directions on the box. Prepare the orange drink mix and start the pancakes after the bacon has finished cooking. Pour off the bacon drippings and just use enough to lightly grease the skillet for the pancakes. Serve the bacon and pancakes together, topped with molasses.

Lunch – 2nd day: same as first day, except use leftover pancakes with cheese instead of the hot biscuits. You will want to steam them slightly before using them.

Dinner – 2nd day: cocoa, Chinese pancakes, fried rice, shortcake (leftover from previous dinner).

Fry about six slices of bacon and set aside. Drain all of the bacon drippings from the skillet and wipe clean. In the meantime, begin a pot of water boiling to cook the rice and to be used for making the Chinese pancakes.

To make about 1 dozen pancakes, sift 1 cup of flour into a mixing bowl; make a well in the center and pour into it about 1/3 cup boiling water. Gradually stir the mix with a spoon until a soft dough is formed; then knead it for about 10 minutes. Roll the dough on a lightly floured surface into a circle about 1/4 inch thick. Then with a cookie cutter or coffee cup, cut as many circles of dough as you can get. Arrange these circles side by side and brush half of them with some bacon drippings, then place the unoiled ones on top of the oiled ones. With a rolling pen, flatten each pair into a 6 to 8-inch circle, rotating the sand-



wiched pair an inch or so as you roll so that the circle keeps its shape; turn it once to roll both sides.

Cook the pancakes, one at a time (in pairs), in an ungreased pan, turning them over as they puff up and so that little bubbles form on the surface. As each pair of pancakes is finished cooking, separate them and stack them on a plate, keeping them warm until all are finished. Then spread a small portion of the fermented bean sauce on each along with some spring onions or chopped onions, and finally putting one piece of bacon on each. Turn one end of the pancake up over the end of the bacon slice, then roll the pancake around the bacon slice similar to a Mexican enchilada. Eat them with your fingers, keeping them tightly rolled to prevent the filling from falling out. This is sort of a mock Peking duck recipe. . . the kind you'll pay $18 a plate for in a Chinese restaurant.

The fried rice can be made in several different ways, but probably the easiest way is to put about three tablespoons of bacon drippings in a skillet with about half the rice you previously cooked (and steamed). Throw in some chopped onion, salt, pepper, and fry. A couple of slices of cooked bacon can be added if desired. When the rice is brown, serve.

The remaining rice may be used to make a rice pudding for dessert using the rice, sugar, and dried fruit and going by your favorite recipe.

This is just a sampling of what can be done with the Three B's. If you'll add some cornmeal to the flour portion of the items, such dishes as hasty pudding, Indian corn sticks, Indian pudding, Indian bread, and Johnnycakes can be made. Also, by keeping the basic ingredients (beans, bacon, and flour) but substituting some different seasonings, here are a few of the other dishes available — although by far incomplete: succotash, Boston baked beans, splitpea soup, sourdough bread, tortillas, frijoles, cheese wafers, shoofly pie, pilaf with mixed nuts, hoe cakes, hoppin' John with black-eyed peas, rice, bacon and seasoning, scrapple, fried pies, mock turtle soup, dried fruit dumplings, pialine sauce, Louisiana red beans and rice, molasses taffy, salt pork and cream gravy, Scotch shortbread, curried split peas, etc., etc., use your imagination to come up with more!

Remember that most of the ingredients mentioned on the Three B grub list will keep for a very long time without refrigeration, so the list is good for backpacking as well as RVing. All of the items are readily available in almost every grocery store, and the total cost will probably be less than half what you would normally pay for an equivalent amount of camp and freeze-dried food. . . certainly enough to make the Three B's interesting enough to partially revive them.

Another point to remember is that a lot of RVers are outdoorsmen — participating in hunting and fishing activities. This means additional meat on the table when in the outdoors and it is much easier to utilize the fish or game with the "scratch" ingredients of the Three B list than with the freeze-dried packs. Others may want to supplement the list with wild plants and berries. In fact, with the proper knowledge of wild edibles, a person could survive well for over a month on the list given for the Three B's. However, our main concern is to enjoy our trips and our food and not to have to worry about hunting some wild game or plant. Still, the old Three B's will handle your food requirements for many days to come if you'll use a little imagination in preparing your meals.

In Search of the Wild Falcon

BY CLAUDIA T. BAGWELL

A pearl-gray sky, streaked with violets and corals like the inside of a seaside oyster shell, lightened over the steely Atlantic.

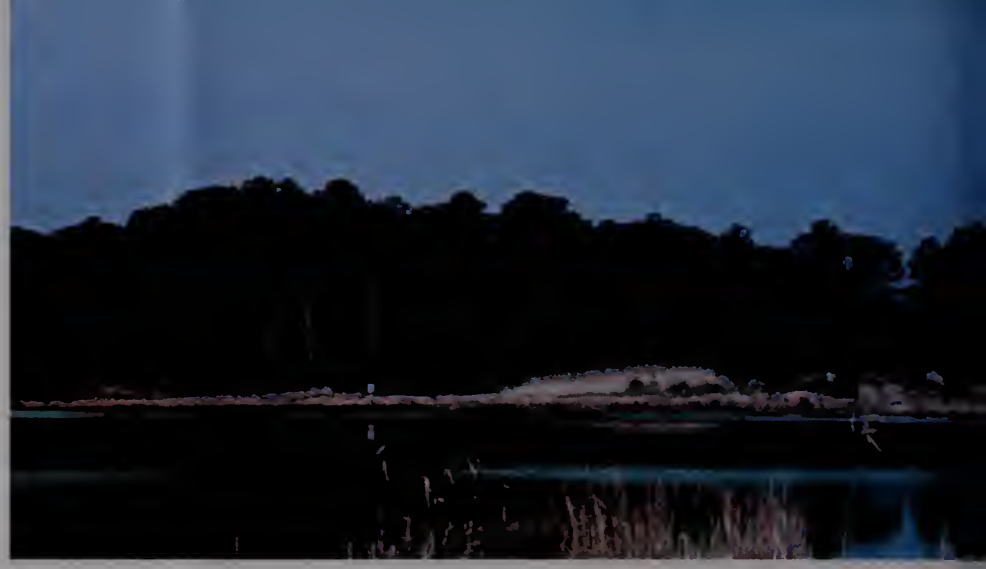
The brightening morning made me feel my dark hour and twenty minute drive from Onancock on the Eastern Shore to the Maryland end of Assateague Island was worth it.

My mission, to scour the Virginia and Maryland portions of the 37-mile long island with falcon bander Prescott Ward, was beginning to look more promising.

A short, dark-haired man greeted me with outstretched hand at the door of the National Parks Service cabin. Scott Ward, 38, was smiling beneath his bushy mustache, and crow's feet crinkled promisingly around his brown eyes. Prepared for a dull, dry researcher, I began to revise my thinking.

Dr. Ward and Palma Wilson, a twenty-two year old employee of the National Parks Service, had been breakfasting on scrambled eggs and Ward's homemade venison sausage. With my arrival, though, the three of us began loading the army-issue jeep for the twelve hour day ahead. Items: covered wooden box containing four pigeons wearing leather harnesses, open wooden cage containing four unharnessed pigeons,

Falcon research on the Barrier Islands is crucial to insure the species' survival.



The Barrier Islands are home to many species of birds.

green metal can with extra gas, binoculars, tape recorder, Styrofoam cooler with lite beer and red wine, and four cans of Army c-rations (combat rations, to civilians like me).

As Ward cleared the dunes separating his temporary headquarters from the beach, he flicked on the mini tape recorder that had been resting on the dash. "Dunes north, 7 a.m." he barked. As I was to see later, Ward would record our location and the hour whenever we reached a different section of the island. Into the recorder, too, he would dictate sightings of any birds of prey other than falcons. The data might be useful to future researchers, he said.

Ward is a civilian employee of the U. S. Army. Ten months a year he works as the chief of the ecology branch at Aberdeen Proving Grounds in Maryland. He evaluates the environmental impact of army projects.

The other two months Ward devotes to collecting data on one of the most regal, romantic and captivating of the world's birds: peregrine falcons.

An endangered species, peregrine falcons live on every continent except Antarctica, commented Ward as we raced down the beach.

As a boy growing up in Pennsylvania, Ward was entranced by the mystique of these powerful birds of prey. His year in routine dog-and-cat veterinary work near Philadelphia only heightened his interest in the wild, free birds and the 38-year old veterinarian now coordinates an international research program on the peregrine.

Data is collected by field agents in Greenland, the Alaskan Yukon, Sweden, Russia and Texas, among other places.

Ward's program is federally funded by virtue of the 1973 Endangered Species Act and the U.S. Soviet detente signed the next year.

Under the Endangered Species Act, the Army supports the collection of falcon data in order to learn more about the endangered bird and uses the information to prevent further decimation of its population.

Ward's program to exchange information with scientists in Russia is federally funded because of the detente agreement to exchange scientific information with the Soviets.

Ward and other researchers go to Greenland each summer to band the newly born peregrines before they begin their annual 15,000 mile journey to Central and South America. In the spring a research team travels to South Padre Island, Texas to catch falcons on their trip north.

In between, each fall, Ward and his colleagues come to this small barrier island off the coast of Virginia and Maryland. The reason? Assateague is the best spot on the east coast of the United States to catch falcons in their fall migration south.

Why is a mystery not yet solved, but since a large number of birds do seem to use the sandy spit as a resting spot in their trek south, Ward and his colleagues come here too.

For thirteen years the Ward team has recorded the number of birds seen and caught as many as it could. Once caught, the birds are banded and blood and feather samples taken.

Around 7:30 a.m. we reach the tip. Ocean City, Maryland, its mammoth hotels and condominiums gleaming pinkly in the early morning sun, is just a few hundred yards away. The irony of the concrete seaside resort and Assateague's desolate, unspoiled beaches in such close proximity strikes the three of us in the jeep.

No falcons sighted yet, though we have seen a few marsh hawks, smaller relative of the peregrine.

Ward wheels the jeep around and we head for the Virginia line, 24 miles away.

At 10 a.m. we reach the Wash Flats in the Virginia portion of the island.

The spot is the best on the island for catching peregrine, says Ward as he snaps open one of the low-calorie beers. The open tundralike quality of the flats may remind the birds of their breeding grounds in Greenland, he says. At any rate, the flat, nearly grassless area once washed over by the Atlantic is ideal for spotting the small shorebirds the falcons favor for prey. Suddenly Ward sees a tiny black speck. From its wing beat, it may be a falcon.

"Keep your eyes on that bird," he commands Palma and me, as he races the jeep nearly the length of the 2½ miles long flats.

Brakes engage, tires screech. Ward tumbles out of the jeep, harnessed pigeon in hand.

Ward tosses the bird into the air, pulls it back toward him with the orange ball of twine tied to its leg. Ward tosses the bird again. It flutters uncertainly, its movement encumbered by the twine. To the black speck circling far above, the pigeon looks crippled, tempting prey.

Photo by Spike Knuth

Ward throws four pigeons in quick succession, drops his red cap as a mark, and drives the jeep about 150 yards away.

The falcon dives. Scientists have estimated the bird's speed during power dives at 200 miles per hour. This bird is a streak of grayish-brown and white as it swoops on hobbled pigeon. Catching her prey, however, she too is caught.

Small loops of fishing line on the leather harness tighten around the falcon's toes as she grabs the smaller bird.

Ward rushes back to disengage the raptor.

Grabbing the speckled brown bird on the chest just far enough below the beak to avoid a painful nip and on the legs above the talons, Ward thrusts the female into the hands of Palma.

Working swiftly, Ward slips a green band around the bird's leg, snips a small feather sample from the secondary feathers and extracts a vial of blood.

The blood sample will be used to study traces of DDT and the wing specimen will be evaluated for trace elements.

As in most cases, the 18-inch tall bird is gentle, though perhaps a bit startled to be handled by humans. In a few instances, the birds will nip, Ward says, but the peregrines are usually calm. Some females will even trill gently.

After a few minutes, Ward's work is done and the bird released. As the small speck disappears in the azure October sky, we again begin circling the 2½ mile long Flats.

As we drive, or just sit and scan the horizon, Ward fills us in with a few interesting facts about the birds we are seeking.

The females are the larger of the species. The males are called tiercels, which is the French diminutive of one third, because they are approximately one third smaller than the females.

Falcon's favorite prey are shorebirds like terns, plovers, sandpipers and small ducks.

Immature falcon, however, prey on flickers and other songbirds. These birds are slower and easier to catch. The young peregrines have not yet developed the speed and skill which enable their elders to single shorebirds out of a flock for the kill.

Ward likens the young peregrines to ponderous crop dusters, swift-flying parents to jet fighters.

Peregrines are the second largest of the falcon species. Only gyrfalcons are larger and next to gyrfalcons, peregrines are most favored for the sport of falconry.

Thought to have been begun by Chinese lords, falconry is commonly associated with medieval lords and ladies in England and Europe. Today the sport is pursued most actively in Arab countries.

Thirty years ago the peregrine falcon population began mysteriously dwindling. The reduction coincided with the advent of dischloro-diphenyltrichloro-thane or DDT, a colorless, odorless, water-insoluble insecticide.

Scientists suspected a connection but were unable to establish it.

Then in 1966, British ornithologist Derek Ratcliffe was sitting in an aerie contemplating the problem. Casually Dr. Ratcliffe picked up a piece of eggshell. The shell cracked.

Hmm, Ratcliffe thought. The shell seemed thinner and weaker than usual. Could it be that DDT was weakening the shells and causing the decline in the peregrine birth rate?

Ratcliffe's hypothesis proved correct, and in 1972 the United States Congress banned, with a few exceptions, the use of DDT in this country.

The insecticide is still made here and exported to Central and South America, however. Since peregrines winter in Latin American countries, Ward and others fear the falcons may still be picking up harmful amounts of the shell-thinning chemical.

If Ward and his colleagues can collect enough data to prove DDT is still in the peregrine food chain in harmful amounts, they may be able to lobby effectively against the chemical's export.

The goal is one reason Ward views his work so passionately.

"I come out here for thirty days, exhaust myself, get very little sleep, catch cold," he says. "One redeeming feature of the whole event is, I think, the work is terribly important. It has international social and political implications. It involves detente with Russia, the use of pesticides in Latin America. That really makes me feel good about what we're doing."

As the sun sets to our left, we begin a final run to the northern end of the island. The gray Atlantic crashes on our right, its swooshing and the roar of our engine making Ward shout.

"It's somewhat like all those other treasures in your life. It's the escape that I get from my bureaucratic pursuits. There's the element of the unexpected. Everyday is like an Easter Egg Hunt. You're kind of sure you're going to find some eggs, but you're not sure where or how many."

It's that wonder, that enthusiasm that should keep Ward on the trail of these swift, powerful birds for years to come.

And the passion Ward shows for the hours of sometimes tedious, always time-consuming collection of data should make the falcons glad they've got a man like Prescott Ward on their side.

Hunting the Eastern Woodchuck

BY JUANITA COLVIN

An off-season activity that can really improve your in-season performance.

Each spring with clockwork regularity, my husband and I make our annual visit to all the neighboring farmers to ask their permission to hunt the everpresent (and usually over-abundant) groundhog.

Unlike his name implies, the eastern "woodchuck" has become a "fieldchuck", making his home in lush, cultivated farmlands. He much prefers the expansive fields of clover, alfalfa, hay, and corn to the sparse forage of the woodlands. Unless carefully controlled by the farmer and the varmint hunter, an acre of cultivated land will house quite a few groundhogs.

The prolific "whistlepig" usually has from four to six young each spring. Since moving to farmlands, he certainly has lived up to his name "chuck" (which was an early Devonshire name given to him meaning "little pig") by consuming an estimated average of 175 pounds of feed per year. Add to that the potential danger to livestock and machinery from the numerous dens he burrows into the ground in making his home, and you have quite a problem.

One farmer we visited last year complained of damge to an expensive piece of machinery when he ran over a large den. Another farmer broke several ribs when the front wheel of his tractor hit a den, throwing him forward into the steering wheel.

When you take all the above into consideration, the varmint hunter provides a real service, which is measurable in monetary gains, to the farmer. The farmer, in return, provides recreation for the hunter — providing that hunter can faithfully follow the few basic rules for a good varminter:

Always ask the landowner's permission to hunt. Most farmers gladly welcome a good hunter, knowing he will help rid him of this pesky little rodent. The few that do refuse permission are likely to be those who have had bad experiences with the "slob hunter" who never asks permission, shoots from the road (which is in itself illegal), and has absolutely no respect for anyone's land or livestock. Fortunately, these so called "sportsmen" are in the minority. Even if you are refused permission to hunt, always thank the landowner and show him you are a true sportsman. This may help to undo any hard feelings caused by others.

Never abuse your privilege once it's been granted. Don't shoot toward livestock — always make sure you have a good backstop. Cross all fences with care, and never leave any trash or litter. Exercise safety rules at all times.

If roads through the farm are available, fine; however, we usually park close to the farmhouse and walk. It's very enjoyable exercise, and helps keep you in good physical shape, a side benefit of groundhog hunting.

If the farmer or landowner is available at the end of your hunt, thank him and offer him part of your take.

Some folks consider the chuck a delicacy when properly prepared, especially early in the season when you get the young ones.

If you show that you are a concerned and respectful hunter, it's a sure bet you'll be invited to return.

One way we use the groundhog to our advantage is to bring them home for dog food. With three large (and always hungry) dogs at home, who regularly eat a sizeable chunk of my salary each week, the groundhogs not only provide a treat for them but save me quite a few dollars over the summer. It's a simple matter to throw an old cooler with ice in the back of the pickup, field dress the groundhogs, and bring them on home.

Many new varmint rifles have emerged over the years as a result of groundhog hunting. A tough-hided animal, the chuck will often take a fatal shot and still be able to kick his way back into his den.

At first, they were most commonly hunted with a .22, but this required an almost perfect hit, with a miss resulting in a ricochet from the low velocity bullet. Most varmint hunters now prefer one of the "hot-stepping" 22 centerfires, such as the 22 Hornet, .222, 22-250, or the 220 Swift. With the higher velocities, a hit results in such a tremendous shock that a fairly well placed shot will generally do in the hog. Also, a miss will usually disintegrate upon impact, thus eliminating (or at least minimizing) the possibility of a ricochet. These cartridges for chuck are the .243, 6 mm, and the .25's. They not only serve as good varmint rounds, but with the wide variety of loading ranges on these calibers, (especially for the hand-loader) they also serve as excellent deer, bear, and turkey cartridges in the fall. Of these, the .243 is probably the most popular.

I usually take my Remington 22-250 equipped with a 3 x 9 Redfield variable scope, and my husband usually takes his Ruger 220 Swift with a 6 x 18 Redfield. With handloads, both of these rifles will consistently group approximately 1/2 inch at 100 yards. With the use of a bipod, groundhogs lead a rough life up to 400 yards, and occasionally farther with the Swift. It's no exaggeration when I tell you that my husband shot one pig at a measured 541 yards with this outfit.

This year, however, we decided to put more of a challenge into our usual groundhog hunts by taking our muzzleloaders along on an occasional hunt. Having only taken up black powder hunting in 1976, we were really pleased with the new dimension this type of hunting had added to our usual hunts.

Believe me — it can be quite a challenge to stalk within 40 or 50 (even an occasional 25) yards of your quarry with an opensighted singleshot rifle! Without the aid of a scope and long-range rifle, or the benefit of a fast follow-up shot, you become acutely aware of the necessity of camouflage; taking advantage of all natural cover available, and walking as slowly and stealthily as possible. It sharpens your sense of sight and hearing and makes you more conscious of your entire surroundings. This is quite different from spotting an unsuspecting groundhog at 300 or 400 yards through your scope.

We took our Hawkens out for the first time on an early morning hunt. The ground fog was still hanging heavy when we left home, with about an hour's drive ahead of us.

When we finally arrived at the farm, it lay before us like a carefully planned mosaic in the early morning sunlight; each field of corn, alfalfa, and hay forming an intricately detailed pane.

My husband decided to head for a freshly mowed hayfield behind the barn, and I chose an alfalfa field. Both were fenced in, and even though scant, the fenceposts would afford us some cover. Also, we had spotted some fresh dens in both fields on a previous hunt.

Before leaving the truck, I paused long enough to check out my equipment. Everything I needed for my 50 caliber Thompson Center replica was neatly packed in my small handmade possibles bag: five premeasured charges of Pyrodex (80 grains each), five prelubed 370 grain maxiballs packed in small plastic pill containers, primers, an extra nipple and nipple wrench, nipple pick, and short starter.

I'd like to say here that it's really not necessary to use the 370 grain maxiball for groundhogs; the .490 patched round ball is quite adequate. However, this is the load I use for deer hunting, and I like to use it just to keep in practice. It's also a very accurate loading for my rifle, and I like all the accuracy I can get, as a groundhog doesn't present much of a target for offhand shooting past fifty yards.

After loading my rifle, I slowly eased my way along the fence, stopping at each post to carefully scan the field. I knew I would have to get fairly close and preferred to take my shots under 50 yards if at all possible.

I worked my way gradually to a gate and sat behind it where I had a good view of a fresh den about 45 or 50 yards away. Ten minutes or so later, a groundhog cautiously inches his way out of the den. But before I could get a shot at him down he went. Hoping he would come back out, I sat there another twenty minutes, but. . . no luck. "Well, I'll just have to move on," I thought to myself. "He's just not going to cooperate!"

After I had crossed the gate and started up a little hill, about thirty yards from the den I had been watching, out came that groundhog again! I raised my rifle, cocked the hammer, set the trigger, and carefully squeezed off a shot at his head (which was about all I could see in the nearly foot high alfalfa) and down he went; the maxiball making a clean, quick kill.

Picking up the nine pound chuck, I was very pleased. Thinking ahead to deer season, I knew how valuable these hunts would be; not only in stalking, but also some good "in-the-field" practice. You won't get nearly as many shots hunting with a muzzleloader, but the number of groundhogs you sacrifice by using this method of hunting is well rewarded with the satisfaction you gain by putting more of a challenge into the hunt.

All in all, groundhog hunting is a very pleasurable and profitable sport, whether it be with modern rifle or muzzleloader. The profits you gain by varmint hunting are not in the amount of money you save the farmer, the possibility of saving yourself a few dollars on dog meat; not even in the pleasure you derive from the hunt. The real profit comes from promoting good sportsmanship and cooperation between the hunter and the landowner for the mutual benefit of both.

Training Your Dog

Establishing a rapport with Rover is the most important aspect of training.

BY CHARLES D. BAYS

After a pointing dog of good breeding has been selected, what is the single, most important aspect of training? Ask a dozen different trainers, and you are likely to receive a dozen different answers. Trainers, like politicians, rarely agree on much of anything.

The responses may vary from whoa breaking to fetching, from backing to steady-to-wing-and-shot. Each is important, if not essential. I believe, however, the most important aspect of training is to get the dog's thinking right. Let me explain how I came to place the greatest amount of importance on this seemingly inane statement.

I was on my first hunt of a new season with Frank Basham, a longtime friend and veteran trainer. We had put down three dogs, including Missy, his seven-year-old English setter. Missy had always been a proficient hunting dog as far as finding and holding birds, but when it came to minding and manners she left much to be desired. We soon found the first covey, which the dogs handled nicely, and were in pursuit of the singles. Missy began to range out too widely and I was sure she would disappear into thick cover to be seen again at a time of her choosing. Frank tooted one sharp note on his whistle. Missy ceased her advancement and immediately raced back to her master.

"Hunt close," Basham softly commanded. The setter slowed her pace and began to carefully work the single cover within good range. "Old Missy has really changed her thinking," Frank said, more a statement of fact than to me.

What Basham literally meant when he said Missy's thinking had changed was that his setter's readiness and reliability to respond to a given command or signal, learned through repetition, had improved. He had gained rapport with his dog. The dog's attitude, her willingness to please, was much better after six years afield. Her personality and temperament had changed from uncooperative to useful. The dog was under complete control, a well-mannered, total asset in the field.

How was this accomplished — and yet a better question, how do we train to start a dog out thinking right? I firmly believe that in order to realize the dog's full potential, it is necessary to begin training at a very early age. The three-month span between two and five months of age is when this type of rapport must usually be established.

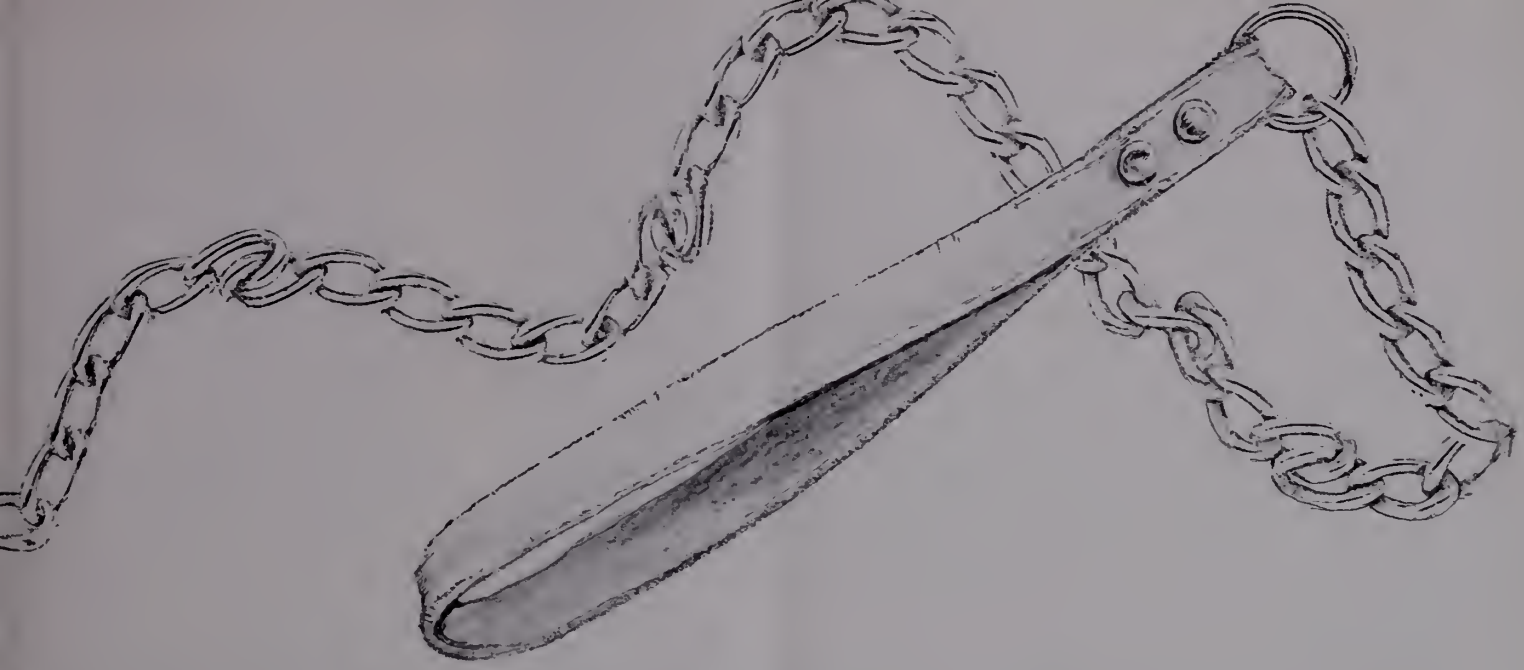
Care must be taken, however, not to overburden the young pup. Training sessions should be short but should be given on a daily basis. For the first two months, there should be no reprimand with the possible exception of changing your tone of voice. At this early age you are not trying to achieve perfection of commands and should not expect it. Your purpose and goal is to develop rapport, to get the dog's thinking right.

The degree of perfection to be achieved later will be determined by the dog's willingness to learn and obey; simply put, the dog must want to please. There are those who will dispute this saying: "My dog minds because he knows if he don't I'll stomp him!" My statement stands. That trainer's dog wants to obey to avoid getting stomped. Fear, however, is a poor motivator for dog or man, and besides, it's not always convenient to stomp the dog. With this type relationship, he will mind only when he feels the trainer can get to him. Also, the dog will be much more reluctant to learn new commands.

The actual way a dog learns is by repetition and association. Repetition is having the dog do the same thing over and over again, and inserting the proper command, until this becomes embedded in his head. Association is when the dog finds by responding one way in a situation he gets a pat on the head and is corrected or reprimanded by reacting in a different manner. This develops habits, which is, of course, why a properly trained dog will immediately freeze on the command "whoa." This being the only accepted way a dog can learn has caused some trainers to expect more from their dogs than can be realized.

The dog with whom you have good rapport and have hunted for a few seasons can, at times, seem to almost read your mind. He may receive and respond to signals obscure to even a close friend.

There has always been a good deal of controversy



over whether or not to allow the hunting dog to share family quarters and if the child should be allowed to play with him. Personally, I kennel my dogs; but this is not to say there is any objection to the dog sharing your living quarters. Contrarily, this is a fine way for the dog to be assured of a good amount of human contact. Likewise, playtime with the kids can be very beneficial to the dog's mental growth and development. This is especially true of a puppy.

When conducting training sessions, it is imperative to have the dog's total attention. This is best accomplished by getting him away from any distractions. I have dwelled on gaining rapport, getting the dog's thinking right. The trainer must also command the dog's respect. This can and should be accomplished without instilling fear. Firmness tempered with patience is the key. If you are sure, however, the dog knows what is being asked of him, accept no compromise. Apply as much pressure as the dog himself dictates, no more or less. When correcting or reprimanding, do it sharply and cleanly, then forget it. Don't hold grudges. If you are attempting to teach a new or difficult command and feel you are losing control of the situation or of yourself, switch off to a simple command such as sit. Praise the dog, terminate the session, and start the new lesson tomorrow.

A mistake many novice trainers make is to feel it necessary to take on the role of a drill sergeant while conducting training sessions. They must feel that in order to get results a loud, sometimes threatening, sometimes irritating tone must be used. If you are a marine sergeant, this is the proper way to handle your dog. Otherwise, I recommend giving commands in a normal tone of voice, with only as much special emphasis as necessary to have the command recognized and carried out. To be a successful trainer, one must be one's self; don't take on an artificial personality when training a dog. During heated times in training or while on the actual hunt, your true personality will be displayed, much to the confusion of your dog.

When hunting with another person, I prefer to save the conversation for the social hour after the hunt. I like for my dogs to want to respond each time they hear my voice. I also prefer to give as few commands as actually required. If the dog is performing in a satisfactory manner, why break his concentration with unnecessary commands?

By limiting your conversation with your buddy, total attention can be focused on the hunt, and the dog. By limiting commands given to the dog, he will learn to place importance on those which are given and more readily respond to them.

Never give a command you do not fully intend to enforce. When commands are given and the trainer fails to see they are carried out, the dog quickly learns he can disobey and may become "hardheaded," a term often misused in training. A "hardheaded" dog is an improperly trained dog. The only exception to this is the physically or mentally handicapped dog, and yes, there are mentally retarded dogs.

Before dismissing a strong-willed dog as untrainable, you may wish to get a second opinion. A fiery, bold dog can, through proper training, become a most outstanding pointing dog. Again, exert as much force as the dog requires and as little as absolutely necessary to get the dog under control.

Each dog is a little different from another, and each must be trained in a slightly different manner. Common sense and experience are the final governing factors.

There will come a point in time of training when the successful trainer realizes he has total control of the dog. This may come at end of the first training session or only after spending several years with the dog. The dog may have to demonstrate afield all the necessary skills to prove himself a gun dog or the puppy may instill in you this inner feeling of confidence once he has learned to sit and stay.

From this moment on, training the dog will take on a different light. Training will no longer be regarded as an uneasy or unpleasant task and will transform into a pleasurable, rewarding experience. Call it confidence, contact, rapport. I still prefer Basham's statement: get the dog's thinking right and a better-trained dog will be the end result.

EDITORIAL continued from page 3
nature's method. Hunters, on the other hand, tend to seek out the biggest and best.

2. Hunters spend much money in support of wildlife, certainly more than the "anti-hunters."

The above claim may or may not be true, but these "Contributions" often referred to frequently take the form of hunting licenses and government taxes on ammunition and guns. This money is then spent on "wildlife management" and to operate the Fish and Game Commission. The former term is another way of saying that habitat is provided and maintained for game species. A handy side bendfit is the "other nongame species" that also are supported by the same habitat. A substantial amount of money spent on licenses goes for the enforcement of game laws. A more effective way of judging all outdoor people would be to measure their voluntary contributions to such organizations as the Nature Conservancy, the National Audubon Society, and the American Rivers Conservation Council.

It's time that your magazine and other responsible outdoor magazines recognize that there is a problem and that quite possibly the "other side" may just be right about some things.—*Larry C. Gross*

EDITORIAL REPLY

We appreciate intelligent and reasoned comments from those among our readers (probably a significant number) who do not hunt. Believe it or not, the Virginia Game Commission feels obligated to perpetuate all wild birds and wild animals of the Commonwealth as we are charged under the law. It just so happens that game animals, game fish and furbearers are our only "cash crops." Since we are self-funded and unauthorized to sell birdwatching licenses we must rely on revenue from hunting, fishing and trapping licenses. This makes hunters, fishermen and trappers our only paying and measurable customers. The Commission by no means turns a deaf ear to other groups, but when a majority of hunters want something we know this means some 350,000 to 400,000 Virginians.

I would like to debate a few points with you. Your first "opinion" that sport hunting is immoral is a common one. I see no moral difference between "sport" hunting and "commercial" fishing. In the latter case, money is the motivation. If the fact that the animals end up being eaten is the critical factor, hen I think most "sport" hunting would qualify as most game taken in this manner is eaten. Deer meat alone taken in Virginia last year was valued at over five million dollars. That is a lot of protein that would otherwise have fed only vultures and maggots.

It is true that the hunters role in saving the world from knee-deep squirrels has been overstated. Deer require hunter control since natural predators such as wolves and cougars have been eliminated. Virginia farmers could not survive without deer populations being kept in check. If hunting were banned, farmers would shoot the deer and leave them to rot in the fields —not a very desirable choice.

Small game numbers are more greatly influenced by weather conditions, food supply and nesting success than by hunting. The point is that those animals killed by hunters are those who would die, anyway. Thus, hunters can harvest a crop of squirrels and we still have adequate brood stock to produce a new crop next year. To not harvest these animals is a waste of nature's bounty, like not picking a crop of apples.

The image of the aged and infirm dying as nature thins its ranks is not too hard to accept. However, it is the young who are weeded out —small, with minimum reserves, unable to compete with stronger adults. In our human population we consider the death of the young the ultimate tragedy. Why not in wildlife populations?

Then there is the balance of nature myth, the idea that nature is a well-oiled machine that maintains the status quo with peace and dignity. Those who know nature realize that although checks and balances exist, they often operate in a chaotic and wasteful manner. Booms and busts in unmanaged wildlife populations are far more common than perpetual stability.

The old story of the hunters exterminating the bison and passenger pigeon dies hard. Some were shot for sport, but 90% were killed strictly for profit or to destroy the food supply for the Indians. It was a tragic waste of wildlife resources but "sport" hunters as we know them were not to blame.

Hunters' contributions to wildlife may seem selfish and not very voluntary since state law requires the licenses. However, hunters originally requested the licenses and they have backed subsequent increases in fees. They, on their own initiative, sought the federal taxes on their equipment. They constantly lobby for laws that will protect and enhance wildlife populations and fight those that would destroy wildlife.

You say that wardens enforce "game" laws. In reality, they enforce all "wildlife" laws. The only protection hawks, eagles, shorebirds, and even songbirds, get is what these men provide. If all management portions of the Game Commission's operations were discontinued, this force would have to remain to prevent total decimation of wildlife by the unscrupulous.

It is true that most state wildlife areas were purchased to support multiple use, including hunting. This fact in no way diminishes their value to other species or the benefits of game management on these lands.

The organizations you mention have made many fine contributions to wildlife and wildlife habitat in Virginia. The Audubon Society was instrumental in getting the Virginia Game Commission established. However, the Friends of Animals and the Fund for Animals, for all their purported millions, to my knowledge, have no demonstratable on-the-ground projects to benefit wildlife in Virginia.

We both agree that slob hunters are the real culprit. We only disagree on how many there are. Hunters are making a definite effort to clean up their ranks. The Game Commission has greatly beefed up the hunter conduct portion of its hunter education course.

We certainly appreciate your compliments on the magazine. If hunting, trapping and fishing get more than their share of the editorial ink, it is probably because these are where some of the most heated controversies arise.—HLG

The Central Blue Ridge

The Geology of the Blue Ridge

BY RUSKIN S. FREER &
FRANK T. HANENKRAT

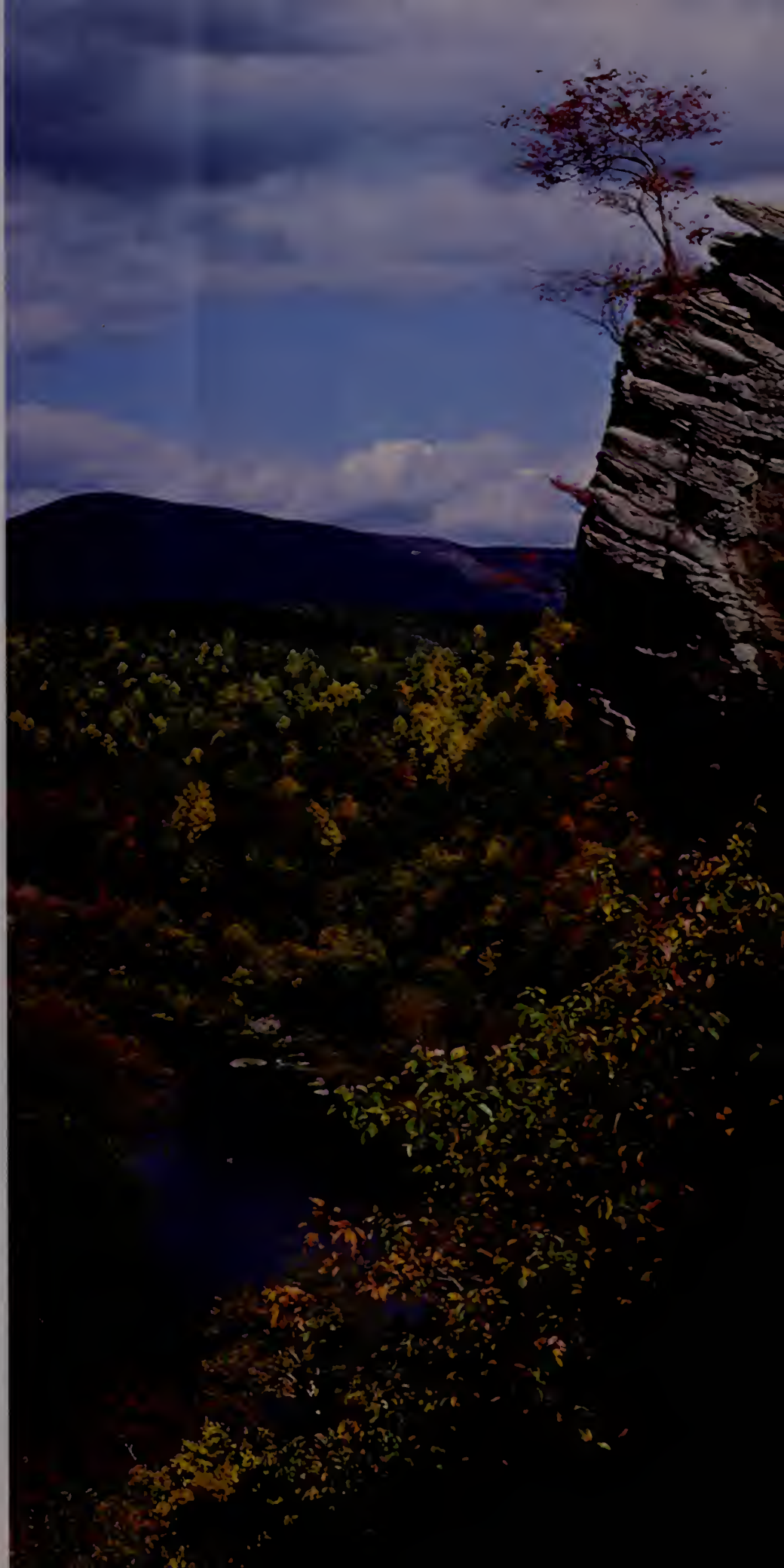
PHOTOS BY FRANK HANENKRAT

This beautiful part of our state has an interesting geological history.

The Central Virginia Blue Ridge is visited each year by over a million people who drive some portion of the Blue Ridge Parkway between its beginning near Waynesboro, and milepost 108 near Roanoke. Such popularity is not surprising, because this portion of the Blue Ridge is certainly one of the more beautiful and scenic areas of the state. For those who know the story behind the scenery, however, the region is even more fascinating.

Geological History

The Central Virginia Blue Ridge is part of the comprehensive Appalachian Mountains that extend from Newfoundland to northern Georgia and Alabama. Their precise geological history is unknown, for it extends far back into the earliest or Precambrian period of geological time. According to the recent approach to earth history known as Plate Tectonics, the present Appalachian region was originally an area of juncture between three ancient continental plates known as Ancestral North America, Ancestral Europe, and Ancestral Gondwanaland (present day Africa). During periods of contact between these land masses, the Appalachian area was periodically beneath sea-level. It is known that rock-forming sedi-



The Central Virginia Blue Ridge as seen from the James River Gorge.

ment deposited during that time along the western coast of modern Africa is continuous with deposits in the present-day Carolinas and parts of Virginia and Georgia.

The ancestral continental plates drifted apart during the early Paleozoic period (about 500 million years ago) but joined again during the Carboniferous (about 300 million years ago). It is believed that the intense pressures generated by this slow collision of continental plates resulted in widespread deformation of the Appalachian region by buckling and folding, converting it into a series of mountain ranges many thousands of feet high and triggering volcanic activity. During the millions of years since then, the continental plates have drifted apart and the present-day Appalachians have eroded to mere remnants of their former grandeur.

Evidence of the age of the Central Virginia Blue Ridge is found in the dominant rock formations bounding the Parkway. From Rockfish Gap (milepost 0) south to Laurel Springs the outcroppings are of the Catoctin Greenstone Formation, a volcanic rock which spread over a large area from Maryland to Virginia in the early Paleozoic (about 500 million years ago). South of Laurel Springs the rocks alternate between the Pedlar Formation, an ancient volcanic batholith of Precambrian age (over 600 million years ago), and the Hampton Formation, a shale deposit of Cambrian age (between 500-600 million years ago). An interesting side trip can be made from the Bald Mountain Overlook near milepost 22, where an unpaved road leads west to Flint Mountain, capped by the Erwin Formation, a quartzite sandstone in which can be found remains of the worm holes made by the marine worm *Scolithus* when the area was beneath the sea during the Cambrian age.

The volcanic rocks of the Catoctin and Pedlar Formations appear as large, solid, hard, often rounded boulders. Rocks of the Hampton Formation, a sandstone deposited in water, appear in thin, soft, easily broken layers. The two volcanic formations are impervious to water and sustain a moist topsoil with mature forestation and a predominance of hardwood trees, comprising a mixed mesophytic forest. The Hampton Formation is water-porous and sustains a topsoil that is comparatively much drier and supports a forest cover that is therefore more susceptible to fire. Because of forest fires in recent decades over the Hampton shale, its forestation is younger and contains a larger proportion of conifers.

The Central Blue Ridge in autumn is a blaze of color.

An appreciation for the great age of the rocks in the Central Virginia Blue Ridge can be gained by comparing them to the Yorktown Formation in eastern Virginia, which is only about 15 million years old. The sand and gravel underlying Portsmouth, Norfolk, and Virginia Beach is less than 10 million years old and has not yet solidified as rock.

Geological Features

Among the more obvious geological features, common to all mountainous country, are the gaps (called "notches" in New England) where both older and modern roads cross westward through the mountains. Originally buffalo trails, later used by the Indians, they were natural routes for more recent roads.

The names of these gaps is an interesting subject in itself, deserving separate treatment. The significance of some is obvious. Humpback Gap, for example, where the old Howardsville Turnpike crossed the Blue Ridge, is just north of Humpback Mountain. The origin of the name for Petites Gap is less certain, as the word has had various spellings and explanations. Bearwallow Gap, at milepost 90.0, where a marshy area occurs, is also obvious, as is the name Saltlog Gap, where cattle were formerly salted.

At milepost 97.5 is the historic and picturesque Black Horse Gap where a stage road from West Virginia and Fincastle in Botetourt County passed over the Blue Ridge to Montvale and points east. A quarter of a mile down the Bedford County side was the old Mountain Gate Toll House, where the stage coach, drawn by four coal-black horses, stopped for a rest for the horses and lunch for passengers. William G. Lord, Parkway Naturalist, spins an interesting, though imaginary story of the passage of a stage coach over the Gap and its arrival at the Toll House, in his *The Blue Ridge Parkway Guide No. 1.*

Several gaps are called "wind gaps" by geologists because of the prevalence of strong winds blowing through them. An example is Rockfish Gap, where routes U.S. 250 and I-64 cross near Waynesboro. It is

believed to have been formed by the ancient Rockfish River, which formerly led from the Valley of Virginia into eastward-flowing streams in the Piedmont region before the original appearance of the Blue Ridge. Geologists believe the ancient Rockfish was "captured" by the Shenandoah River and diverted northeastward into the Potomac drainage system by stream piracy, a process whereby one stream undercuts, by erosion, the channel bed of another, more elevated stream and absorbs its flow.

There is a potential for stream piracy on the Parkway between mileposts 80 and 81 at Floyds Field, a small grassy opening in the forest, where a person standing on the Parkway could throw a stone into the drainage system of either Cornelius Creek, flowing westward, or Stony Creek, flowing eastward. Cornelius appears to have the advantage over Stony because of its steeper gradient and higher rate of erosion.

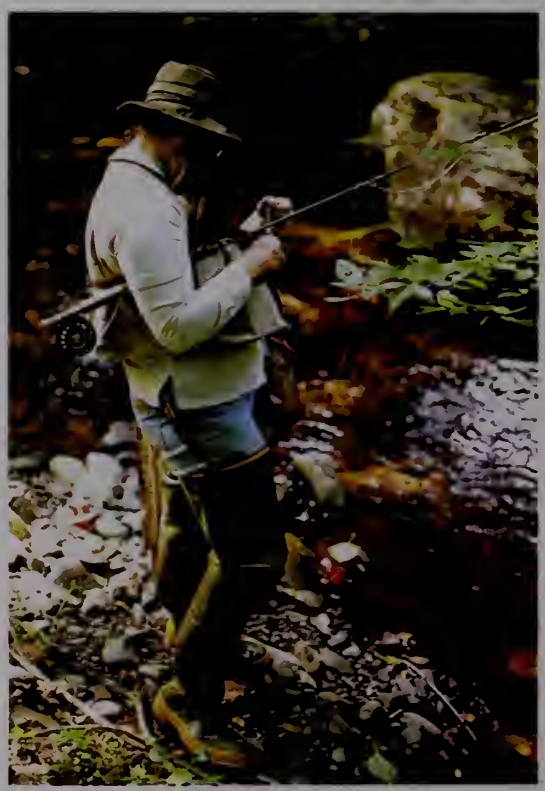
Of all the gaps, one of the finest, rivalling the view of the sunrise from Sharp Top at the Peaks of Otter, is the James River Gorge, almost four miles long. It lies between Glasgow in Rockbridge County and Snowden in Amherst County. Steep forested slopes arise from each side of the Gorge; U.S. 501 passes through it halfway up the mountain. Also an old canal passed through it, and a Chesapeake and Ohio railroad branch follows the river bank. On the Bedford County side is the James River Face, part of a large wilderness area.

A very special type of geological event can be viewed at milepost 95.2. There the rocks of the Valley floor, formed from sediments formerly on the west side of the Blue Ridge in very ancient mountain forming times, were extremely folded in what geologists call an overturned fold, and were shoved eastward over older rocks, resulting in a reversal of position of older and younger rocks of the fold.

One of the more attractive, also perhaps curious, features of the Central Virginia Blue Ridge overlying the Pedlar and Catoctin Formations is the occurrence of large, bold springs near the tops of summits and ridges. On first finding one of these springs at high altitudes, one cannot help but wonder how there could be an adequate source for the high volume of water-flow. Geologists explain this situation as the result of perched water tables, formed as water is captured and slowly released by the numerous fissures in the impermeable granitoid rock. These high springs, as in the case of incipient piracy between the headwaters of Cornelius and Stony Creeks, have an important and interesting effect upon the erosional shaping of the mountains and stream-courses, and, as we shall see, also upon vegetation.

Near milepost 22 in Augusta County, the road leading to the fossil-bearing Erwin formation also leads to Green Pond, which contains enough peat to form a true peat bog, a situation rarely encountered in Virginia. In the same region, between Stuart's Draft and Sherando, there are roughly 30 or more ponds, though most contain little or no peat. The ponds vary between permanent and temporary and are located on an extensive alluvial plane sloping gently westward from the Big Levels area. Most of the ponds are believed to lie over subterranean limestone caverns, suggested by the existence of a number of circular, dry depressions in the area. Ponds apparently exist where drainage into caverns is partially or completely obstructed. The rocks overlying the limestone consist largely of fragmented Antietam quartzite from the ancient, eroded Blue Ridge.

Using this fly, even the novice can successfully take trout in the summer months.



The Letort Hopper brings in those elusive trout on the hottest day.

Fly for a Summer Day

By A.G.Eastby

During the blistering days of July and August most trout fishermen devote a lion's share of their attention to their backyards and lawns. The favorite streams of spring are now shrunken trickles flowing down the centers of avenues of baked gravel. Pools, only weeks ago dimpled by rising trout, now appear devoid of all life except for a handful of chubs lazing in the shallows. Even the streamside trees seem to wilt in the heat. As for the trout, they either have disappeared or have become so difficult to take that most fishermen are content to relive the halcyon days of May in their imaginations while lounging in the shade and nursing tall, cool drinks.

There does exist, however, a hardy band of anglers who look upon the advent of summer with relish. To them, July the Fourth is the opening day of a second season for which they have been carefully preparing for weeks. Streams capable of supporting healthy populations of trout during the severest droughts and the most punishing heat waves have been selected and scouted. Tackle, including long, fine leaders and rods capable of delivering accurate, controlled casts, is readied. Fly boxes are carefully pruned, all the exquisite dry flies and artfully designed nymphs are put aside. In place of Quill Gordons and Hendrickson, of March Browns and Grey Foxes, the second season specialists turn to their midsummer day's fly, the Letort Hopper.

Grasshopper imitations are not new to fly fishing. I can recall learning about hopper fishing with the hollow quill bodied "flies" designed on Pennsylvania's limestone streams. Then I turned to the famous Michigan Hopper and its variant, Joe's Hopper. These flies were barely acceptable at best, and they simply cannot compare with the Letort Hopper. Virtually indestructible, capable of floating through a full day's fishing, the Letort Hopper is one of the deadliest flies ever devised to take warm weather trout.

One of the advantages of the Letort Hopper is that it is not a difficult fly to tie. There is a dubbed body of fur or polypropylene, a brown turkey wing quill segment underwing, and an overwing and head of deer body hair. Most of the fly tying guide books specify a yellow body, but I carry a selection of hoppers with olive-yellow, olive-brown, olive, and yellow-brown bodies. It has been my experience that the trout will often show a decided preference for a particular color. I can see no reason for this because there are many species of grasshoppers displaying a variety of colors. But since it is so, I make it a point to be prepared to please the most finicky of trout. When tying small hoppers I leave off the underwing since the immature stage of the grasshopper, called the nymph, has no wings. For the overwing I use medium textured hair from a deer's mask. I find that this flairs more easily than the coarse hair from the body. This also helps make a neater, more durable, and more realistic head. Furthermore, the colors and markings of the mask hair are varied, allowing me to copy more closely the naturals. With flies tied along these lines anyone can feel confident of being able to take trout even on the hottest dog days of August.

A number of different techniques can be used in hopper fishing. While not difficult to master, they can cause raised eyebrows when witnessed by more conventionally minded fishermen. For example, my wife favors a rather bizarre presentation. Casting directly across the stream, she allows the hopper to skitter and flitter over the surface as it swings below her. This works often, usually when someone is watching, and has been the cause of unprintable mutterings and dispirited head shakings. Although this is an extreme case, it illustrates the fact that successful hopper fishing calls for a willingness to experiment and to depart from the accepted canons of dry fly presentation.

The traditional approach to hopper fishing, as developed in Pennsylvania's limestone country, is to cast up and across stream then allow the current to drag the fly over the surface, thus imparting a degree of action resembling the struggles of a live hopper. Although I use this method frequently, I have found that it is usually better to drop the fly a foot or so above a trout's holding position and allow it to drift without drag over the fish. This is particularly effective when trout are lying in bankside pockets. If this doesn't work, I try to twitch the fly. This will often bring even the fussiest brown up in an explosive strike. Sometimes I cast into the grass and weeds on the bank and gently ease the fly into the flow, or if the fish are particularly sluggish, I cast onto the bank, then pull decisively on the line so the fly falls with a distinct "plop" into the current. The exact tactic to be used will be dictated by the fish and will vary from stream to stream and from day to day. Perhaps several examples will help clarify these points.

Illustration by Spike Knuth

Meadow streams are, of course, the classic sites for hopper fishing. One of my favorite meadow stretches is on a lovely, intimate mountain creek. Originating in a high and undeveloped region, this creek remains cool throughout the hottest of summers. Best of all, this stream supports a healthy population of brown trout, many of a size remarkable for such heavily fished waters.

On a blazing July day this past summer I arrived at the stream about one o'clock in the afternoon. The handful of anglers who regularly fish one or two of the larger pools had given up so I had the entire stream to myself. After slipping into my boots and setting up my rod, I made my way through the high grass to the stream. Although the water registered 70° F. on my stream thermometer, it felt delightfully cool about my rubber encased legs. After knotting a size 10 brown-olive bodied hopper to my leader, I proceeded to fish my way upstream. Trout after trout took my fly, some hitting so decisively that the fly was knocked out of the water. When I finally quit for the day, I had taken sixteen browns. But my fun did not begin until I established two facts. First, the trout were holding close to the undercut banks, nestled in safe, shaded hides. Second, the trout were in the mood for easy prey and wanted their afternoon snack drifted right over their heads.

The next day I returned to the stream with three favorite companions. While they set to work trying to coax fish out from the bankside pockets, I headed off on my own. During the night a slow, steady rain had raised the creek slightly, and the air temperature had dropped noticeably. This, I suspected, should have been sufficient to change the mood of the trout. It was. While my cohorts emulated my tactics of the previous day, I devoted a half hour to reconnoitering and experimentation. As a result, I was able to take several good fish including a plump, beautifully colored two pounder. My skunked companions demanded an explanation so I told them that the trout apparently had moved out and were cruising the stream searching for food. A Letort hopper, cast up or up and across stream and twitched rapidly so that it skipped along in a lively fashion, elicited shattering rises as the trout engulfed the fly. Once my companions adjusted their manner of presentation, they too, began to take fish.

When tackling trout on boisterous mountain streams, the techniques that work on meadow waters also take trout. On many occasions, however, trout in these creeks can be driven into a furious rage by a hopper that crash dives into their stream. For a reason I have yet to discover, trout in fast, broken water show a decided preference for hopper delivered in a noisy fashion. But remember — don't overdo a good thing. Summer trout are wary and will often spook at the slightest provocation. So while my experience has been that hopper fishing on rollicking, roistering rivers does not demand the same degree of finesse called for on more placid waters, the angler willing to temper his enthusiasm with good judgment will have more success. A half hour or so spent in finding the perfect "plop" for the time and place will pay off handsomely.

Two other aspects of fishing with Letort Hoppers deserve to be mentioned.

Trout will often take a Letort Hopper when they are actively feeding on things other than grasshoppers. I have caught trout on this fly during caddis hatches, while they were nymphing, and I have seen trout with minnows and crawfish filling their gullets chase a skittered hopper for up to twenty feet before nailing it. The explanation for this is not hard to find. During the summer, food is relatively scarce and a grasshopper represents a substantial meal to a trout. Therefore, the fish will generally accept any that come their way. Furthermore, the action of live, or of manipulated artificial hoppers in the water triggers an instinctual response in the trout that sends them rampaging off after the helplessly struggling insect.

The Letort Hopper is also useful in one of the most rewarding undertakings attempted by fly fishermen. At one time or another, all of us have taken someone in hand and tried to help him to become a good fisherman. Too often, however, the results are not what we would wish. Of course, everyone likes to catch trout, but it is vitally important that the neophyte be given every opportunity to feel what it is like to take trout. After all, he or she probably lacks the philosophical attitude that allows more experienced anglers to enjoy themselves even if they catch nothing. But day after fishless day can sap the enthusiasm of even the most ardent beginner, especially the younger ones. The way to insure that your apprentice has the satisfaction of an occasional trout is to see to it that he has a supply of Letort Hoppers in his fly box. Since this fly will take trout with a less than perfect presentation (sometimes "sloppy and ploppy" is best), it is ideal for giving the beginner a taste of taking trout.

This, then, is my prescription for turning the summer into one of the most exciting and productive parts of the trout season. The first ingredient is a good stream capable of maintaining trout throughout the year. The second constituent is a subtle blend of willingness to forget hard learned lessons about delicate presentations and tiny flies and the flexibility of mind to try something new. The third component is the most important element in this formula for success: the Letort Hopper, a midsummer day's fly.

Beach Adventures

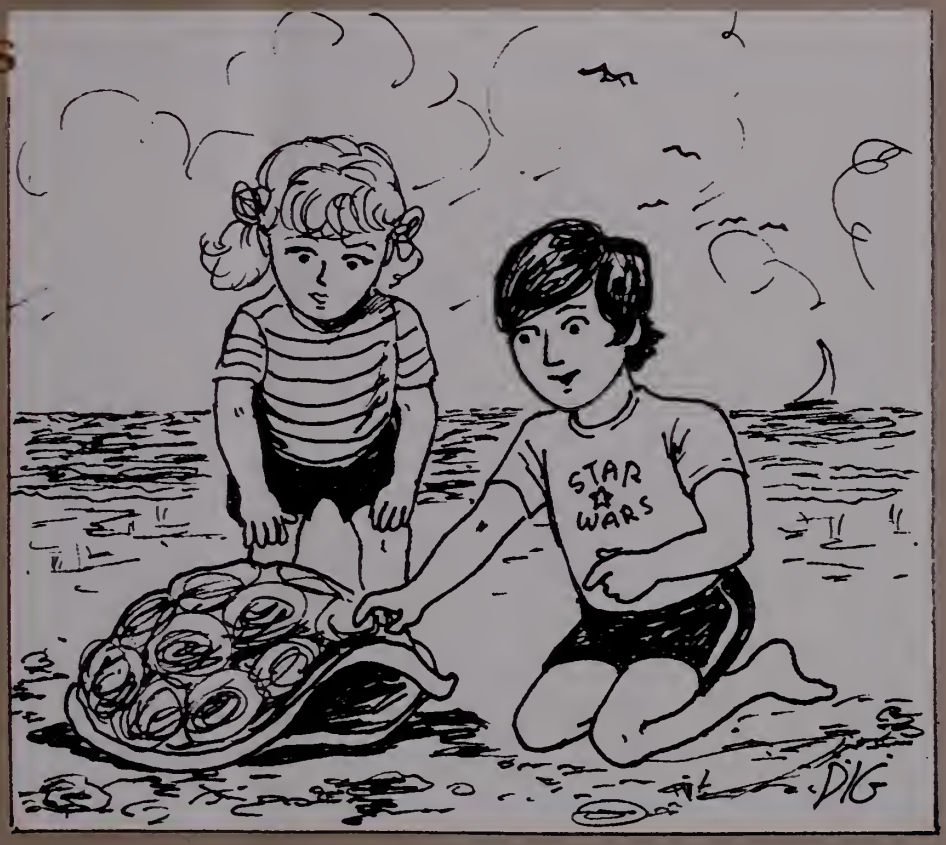


Illustration by Diane Grant

Matt and Amy walked out into the cool morning. The mist was still on the ground, largely brought about because of the fact that they were only about 100 yards away from the ocean.

The twosome were staying with their parents in a small house on the coastline of Virginia. Matt and Amy loved the beach and looked forward all year to their week-long stay on the waterfront.

After three days at their ocean cabin, the two had collected several baskets full of shells. So much, in fact, that their mother had called a halt to their shell collecting expeditions.

"Leave some for everyone else," she had said laughingly.

"What can we do, Matt? We could build a sandcastle, but we did that yesterday and Mom says the water is too cold this early to go swimming. I wonder what we could do that would be different?" Amy squatted down on the sand and stared out on the early morning restless waters beyond.

"Well, we could collect things besides shells, like different looking pieces of driftwood. If you look carefully, you can really find some of them." Amy looked up at Matt and by the intent look on her face it was clear that he had captured her imagination.

The two set off on their driftwood hunting expedition and several hours later they returned with three small and interestingly-designed pieces of wood.

Their Mom and Dad were very excited over their finds when they produced them for inspection that night. "I think we can put that piece on the small table in the family room, Amy," their Mom said that night. Amy beamed with pride.

The next morning the two left the cabin and began again their search for new and interesting things to find on the beach. Both were aware that because of the constant shifting of the sands and the movement of the water that things changed on the beach every day. Amy found a piece of glass that was colored a dull green and polished by the water and sand so smoothly that there were no rough edges anywhere.

She was inspecting her find and deciding that it was very pretty, indeed, when Matt's shout made her look up. Her brother was standing about 100 yards away.

Carefully, the little girl placed the polished glass in the pocket of her jeans and then ran to her brother's side. There on the beach was a sea turtle. Much to the dismay of the two children, it appeared to be dead.

The turtle was about a yard long and was very large to the children's eyes.

"Matt, what should we do?" Amy asked her older brother.

The boy thought for a few minutes, all the while intently examining the turtle. "Well, I think we should tell somebody. We can't just walk away and not do something and besides, the turtle is too big for us to move, anyway. I guess we should go tell Mom. She'll know what to do," Matt said and the two began to run excitedly back to the small cabin.

Several hours later, the children returned to the house, this time with not quite the same excitement of the last time. The hours between had been full. Their mother had telephoned the Virginia Institute of Marine Science who had come to examine the turtle.

Matt and Amy's Mom had read in the newspaper that VIMS wanted to be called when a stranded sea turtle was found. The group was studying the status of sea turtles and the children's report had been a big help in their study. Both the brother and sister felt very proud of the role they had played.

One thing the experience did, Amy thought, was to make her even more sure about what she wanted to be when she grew up . . . a marine biologist!

It Appears To Me

By Curly

. . . A PERSON OUGHT TO HAVE ONE

One of the things that has intrigued me ever since I was a mere lad, and I feel certain that I am not alone, is catalogs. It really didn't make much difference what the catalog contained. . . seed, farm machinery, guns, fishing equipment, saddles; heck fire, you name it!. . . I was fascinated. Recently I discovered a few catalogs that are free and thought that some of you might like to know about them. Naturally I reckon that winter is really catalog time, but you know; a lazy, rainy July day ain't all that bad either for dream-book looking. If you are interested, write to West Fork, Inc., 28 Lakefield, Minnesota 56150 and ask them to send you their catalog called "Backpacking, Hiking, Camping Supplies." Another one along the same line is entitled "Camping Supermarket" and this 68-pager is published by Campmor, Box 407-Z, Bogota, New Jersey 07603. Now if you are specifically interested in boots of the hiking variety, get in touch with Tecnica Mt. Boots, Box 960 B, Hanover, New Hampshire 03755 and request their latest one. Finally, for just now, if you need information about backpacks and frames and the like, write to Tough Traveler, Dept. B, 1328 State Street, Schenectady, New York 12304 or to Trailwise, Dept. T, 2407 Fourth Street, Berkeley, CA 94710.

Many, if not all of you, are familiar with the National Wildlife Federation and its affiliate organizations such as the Virginia Wildlife Federation. The more than four-million-member organization is now 43 years old and the actions to stop environmentally damaging projects, lawsuits, educational endeavors and a multitude of other accomplishments are a testimony to an organization that can and does get things done. The folks down at the NWF in Washington have come up with a free slide lecture program which tells all about the Federation. Twelve minutes in length, the program comes complete with a cassette tape containing recorded narration. Or, if preferred, a script can be used. Persons interested in obtaining the free program on loan may do so by contacting: Director of Affiliate Services, National Wildlife Federation, 1412 16th St. N.W., Washington D. C. 20036 or by phone by calling 202/797-6846.

Seafood being as favored as it is by so many people leads me to believe that perhaps you might like to know where you can write for a book of some right delicious recipes. Drop a line to the Sea Food Marketing Authority, 1748 Forest Drive, Annapolis, Maryland 21401 and ask for their booklet "Taste of The Chesapeake."

. . . FOR YOUR BOOKSHELF

OK all you hikers, backpackers and wily wanderers of the wilderness, there is a new publication which is a dandy and, by golly, it seems it was written for each of you personally. Entitled "A Guide to Temperatures on 150 Appalachian Mountain Summits," this soft-cover is packed with just the kind of specific information a body needs to properly plan for an outing in the mountains. As an example, let's say that you plan to visit Old Rag Mountain in Virginia during this month of July. Old Rag is located in Madison County at Latitude 38.55, which is common knowledge. . . however, by referring to this publication, you learn that the elevation is 3,268 feet above sea level, the daily maximum temperature that you can expect is 74.8 degrees F, and it will drop to 58.2F later that day for an average daily temperature for July of 66.5 F. Maybe you plan to go to Quebec this month instead. So you plan to climb Mt. Jacques Cartier and need to get the facts. They are, elevation 4160, and you can expect an average F temperature of 49.9 degrees. How about that, sports fans? The book sells for $2.00 and it is available from CLI-MET SERVICE, 320 Vierling Drive, Silver Spring, Maryland 20904.

If the name "Ding Darling" rings a bell with you, I am certain that it conjures up some right pleasant memories. If it is unknown to you, let me tell you that he was undoubtedly the foremost editorial cartoonist in the United States at the pinacle of his half-century-long career as an artist. Ding was a man who hobnobbed with such folks as Will Rogers, Henry Ford, Teddy Roosevelt and a host of other prime movers. He was an ardent conservationist who preached environmental sanity and, although he locked horns with President Franklin D. Roosevelt, FDR appointed him as Chief of the Biological Survey which was the forerunner of the U.S. Fish and Wildlife Service. As it turns out, the Iowa State University Press has just published "Ding: The Life of Jay Norwood Darling," and it is a beaut. Authored by David L. Lendt, the 260 pager is available for $10.95 plus 60 cents postage from the Iowa State University Press, Ames, Iowa 50010.

. . . AND THEN

Some years back, a well known radio character, Uncle Ezra who starred on station WLS in Chicago, said it and it seems appropriate now or anytime, "Sitting and wishing don't change your fate. The Lord provides the fishing, but you provide the bait."

Serengeti on the Shenandoah

The Smithsonian's research center in the Virginia countryside makes for some exciting viewing.

PHOTOS AND STORY BY DINNY SLAUGHTER

Grant's Zebra

If you travel Virginia Route 522 just south of Front Royal in Northern Virginia, you are in for the shock of your life. Motoring through Chester Gap, the broad vistas of the Massanutten Mountains loom in the distance and Skyline Drive is approaching when you suddenly do a fast double take. You hit the brakes adding additional skid marks to an already defaced surface and wonder where you are! Oblivious to you, and grazing peacefully on slopes of grass and timber, are Grant's Zebra, Bactrian Camels, Scimitar Horned Oryx, Pere David's Deer, Onager, and other exotic hoofstock. Unseen by the casual traveler but also in attendance are Golden Lion Marmosets, Binturongs, Lesser Pandas, Tree Kangaroo, and numerous colorful species of birds.

You have inadvertently entered the land of the Conservation and Research Center. This 3,000 acre domain, operated by the Smithsonian Institution, is dedicated to the preservation, propagation and research of rare and endangered species. Although the center, which began in early 1974, is relatively new, the area has long been associated with animals and research. Originally a United States Army Remount Station, it once housed horses and mules. In 1948 it became the Beef Cattle Research Station and Agricultural Research Service, working in conjunction with Virginia Polytechnic Institute. Cattle were raised under strict controls to test combinations of feeds on rates of growth. During its history the station was also utilized as a training center for K-9 dogs and for a period during World War II, it housed German Prisoners of War.

In the winter of 1973 the Department of Agriculture terminated cattle activities at the station and the property was placed on government surplus by the General Services Administration. The Smithsonian Institution's National Zoological Park had been searching for a breeding farm site for many years and the close proximity of the station to the Washington office (65 miles) made it especially suitable for this purpose.

Scimitar Horned Oryx

Bactrian Camel

The fact that the station was adequately equipped for occupancy, including barns, supplies and personnel housing made it a natural choice.

In the spring of 1974 a small staff erected eight foot chain link fence, a must to keep exotic hoof stock contained and a deterrent to local cattle, whitetail deer and feral dogs. The first animals, Scimitar Horned Oryx, arrived in June of that year. For the next four years and continuing even today the station undergoes constant changes, modifications and additions to adapt it to the needs of its new mission: "To conserve rare and endangered species of mammals and birds through captive propagation and research."

Darwin's Rhea

European Wisent Bull

Personalities BY FRANCIS N. SATTERLEE

JOY TURNER "The Voice of Richmond"

Mrs. Joy Turner is the former Joy Sturgill from Charleston, West Virginia. Actually, she was born in Birchton, West Virginia, which was a small coal mining town near Beckley that now no longer exists. However, when she was about five-years old, the family moved to Charleston and it was there that she grew up and considers home.

Her father is by trade a baker and she recalls that he was Master Baker for the Daniel Boone Hotel in Charleston and she did, and does, enjoy his cooking. Joy attended Mercer Elementary School and Thomas Jefferson Jr. High in Charleston. Another move just prior to her senior year meant that she spent her final year at, and graduated from, South Charleston High School.

During her growing up years, she worked at . . . you guessed it! . . . a bakery, but not with her father. Delightedly, she remembers that she was one of a number of girls that worked there. They could eat whatever they wanted to . . . as long as they didn't waste anything. They didn't. One item which the bakery produced was bread, naturally, and the girls would get the hot bread fresh from the oven, get some butter from the grocery store next door, and enjoy!

About two years after she graduated from high school, she lived for a time in Columbus, Ohio and then moved to Richmond to accept employment as a secretary with a large department store. Later, she worked for three years as a receptionist for the Division of Justice and Crime Prevention in Richmond. In February of 1978, she was hired by the Commission of Game and Inland Fisheries as their Radio Dispatcher with additional secretarial responsibilities. As Radio Dispatcher for the Headquarters of the Commission, she is literally the "Voice of Richmond" and she is in daily contact with the radio-equipped warden force which numbers over 150, the fish and game biologists, other authorized persons and the U.S. Fish and Wildlife personnel who are included in the radio net. Shown above, Joy is seated at the console for the Richmond Base Station. Another Base Station is located at Deep Creek, Virginia.

Joy enjoys being in constant contact with Commission personnel in their daily work, which spans the varied nature of Commission business from law enforcement to trout stocking in the beautiful mountain streams of the Commonwealth. She is married to Richmonder, James D. Turner, Jr. and they make their home in Henrico County.

Outdoor Notebook

Should We Fire the American Eagle?

Pity the poor eagle — America's put-down national emblem! Not only is it in danger of becoming extinct, but it is also likely to be dismissed as the nation's noble symbol of freedom.

It won't be the first time the poor bird's gotten the bird. None other than Benjamin Franklin held out for a poor relation, the wild turkey, as national bird, accusing the eagle of being "a carrion eater, a lazy thief, and a bird of bad moral character more suited to Imperial Rome than to a democracy."

Ben lost out and the Continental Congress chose the bald eagle as America's symbol of freedom on June 20, 1782. Since that date its image has appeared on currency and the Great Seal of the U.S. Government on countless documents and treaties.

Today this soaring symbol is challenged on several fronts. Ranchers in Wyoming and elsewhere continue to accuse the bird of preying on lambs and even adult sheep, claiming a loss of 8,400 animals in 1970.

"These figures have been so grossly exaggerated as to be useless," Dr. Oliver K. Scott, a Casper physician and cattle rancher himself, told a Senate subcommittee in Washington. "I know of only one reliable report of an eagle taking a lamb."

Eagles signify strength as well as freedom, and in some parts of the world have been trained to hunt wolves and even kill full-grown wolves. Naturalists claim, however, that most eagles, though ten times more powerful than a hawk, cannot lift prey over eight pounds.

Killing of bald and golden eagles is a federal offense, yet hundreds have been shot and more shootings threatened. In Alaska, salmon fishermen were among those paying out bounties which brought down thousands before 1952.

"Bald" eagles, meaning "white", are especially vulnerable to pollution, and even when man doesn't shoot the eagle down from the skies, DDT almost succeeded in doing so, since it feeds at the top of a pesticide-concentrating food chain with fish a principal part of its diet.

Since World War II there has been a long period of decline for the noblest of birds, almost as though it was now an emblem of America's general state of pollution. Writes David R. Zimmerman, U.S. Fish and Wildlife Service, of studies of bald eagles:

"Long emeshed in allegory, the bald eagle is acquiring a doleful, new role as a symbol of Americans' destruction of their natural heritage. As before, the great bird is shot, beaten, and driven from its range, even as it is celebrated as the expression of our national courage and resolve. Bald eagles are among our most polluted birds."

Although it is estimated they may live to be 100 if unmolested, eagles lay but one or two eggs each November, and it is the young that have been in gravest danger from pollution from almost any contaminant, including mercury.

Fortunately, recent tallies of newborn eaglets seem to show an improving future for the bald eagle.

Another threat to the eagle's existence is that which threatens all forms of wildlife, the taking over of its habitat by man. In Alaska wholesale timbering along the coastal regions for a time seemed to doom the bird's nesting areas there, until logging was stopped to protect it.

The bald eagle, fist federally protected in 1940, was placed on the endangered species list in 1967. Some argue this is reason enough why it should *not* be the national bird. Nor is it a realistic image for most citizens, argues Dr. Conrad Myers, of Beloit College, who has waged a small fight to have the eagle replaced as national symbol by, of all birds, the chickadee.

"We need a whole different national attitude to counter-balance the restlessness in our society. We postpone our existence while we try to get to be eagles instead of celebrating life here and now as chickadees, which could represent a type of personal liberation, for in truth, more of us are like chickadees."

Perhaps this friendly little bird is not so far-fetched at that. While Benjamin Franklin was campaigning for the wild turkey as national bird symbol, Thomas Jefferson was doing the same for the dove. Others liked the owl or the hawk.

Eagles mate for life, a point in their favor. They've figured in myths and folk tales since man's earliest days but always, it seems, were in danger. As early as 1904, naturalist John Burroughs wrote:

"I see fewer eagles along the Hudson River than I used to see fifteen years ago."

Even then they were shot by trophy collectors, their eyries robbed by egg takers and their nesting trees chopped down by farmers joining in the war against eagles as "vermin."

Many American institutions are today under fire; the National Anthem may be on the way out, the American Flag gets little of the respect it once did, now it's the wide-winged bird that is our soaring symbol of freedom.

Should the proud eagle be fired?—*Duane Valentry*

State Forest Maps Available

When on your outdoor adventures, maps can often make the difference between a successful outing and a not-so-successful one.

The Virginia Game Commission has available maps to all the state forests in the Piedmont section of the Commonwealth in one convenient package. The maps are pocket size and ideal for taking along in your backpack or boat.

The Prince Edward-Gallion State Forest, Pocohontas, Cumberland and Appomattox-Buckingham State Forests are included in the handy publication, priced at just $.25.

The Game Commission also has beautiful full-color maps available for the various districts of the Jefferson and George Washington National Forests. George Washington maps sell for $.50 and Jefferson National Forest maps for $1.00 each.

Write: Virginia Game Commission, Maps, P.O. Box 11104, Richmond, Virginia, 23230.

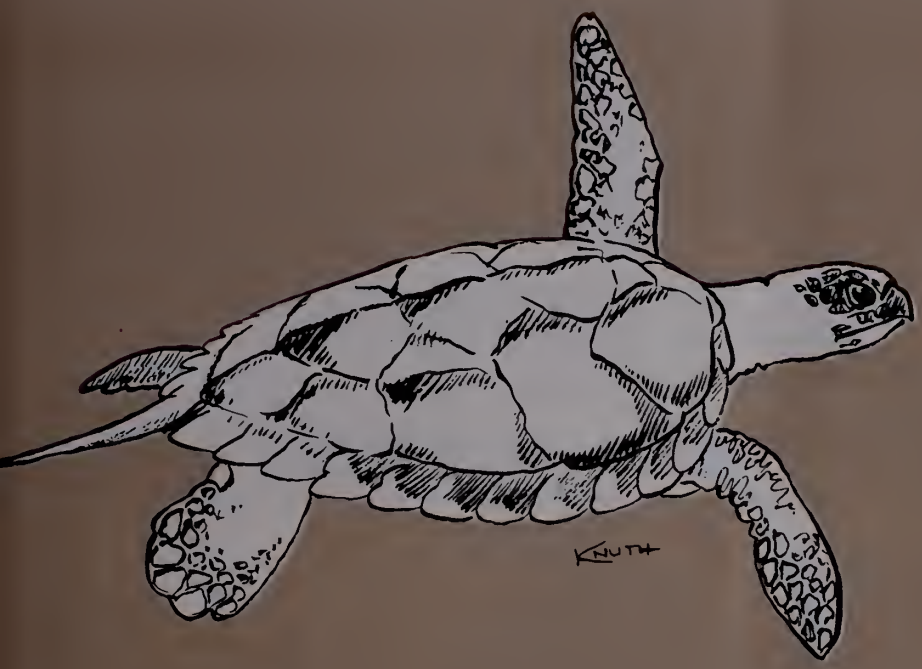
The right map just might keep you from getting lost — and wasting gas!

New Bike Trail On Refuge

Bikers can now enjoy an extended ride through Chincoteague National Wildlife Refuge by using the recently completed bike trail. The trail winds through the woods from the refuge entrance to the visitor center's parking lot and then from Wildlife Drive to Beach Road. User fees paid last summer by visitors using refuge facilities paid for the trail's construction. Future plans include the widening of the existing road to accomodate bikers who wish to ride to the beach area.

For further information, contact Gerry Franz at 804/336-6122.

Sea Turtle Data Sought By VIMS



Beachcombers and recreational boaters who sight stranded or dead sea turtles are being asked to report such sightings for a scientific study presently underway, according to Dr. Jack Musick, a VIMS scientist.

Musick, assisted by graduate student Mollie Lutcavage, is seeking data on size, weight, sex, species and cause of death in a VIMS pilot research project on the life history and population dynamics of sea turtles in the Virginia coastal and estuarine area.

"Although we will study all sea turtles, our particular interest is the loggerhead since it is apparently the most abundant sea turtle of the area and since we have mortality data for this species in lower Chesapeake Bay.

"These are very large turtles that usually reach a weight of 500-700 pounds and a carapace (shell) length of 33 to 36 inches. The record weight is upwards of 1000-1200 pounds and a size of 84 inches carapace."

All sea turtles have been placed on the endangered species list and are protected against public capture or harassment by Federal law, according to Musick. He cautioned sighters of stranded or dead sea turtles that the law also prohibits any tampering with these or removal of any part.

Persons sighting dead or stranded sea turtles are asked to report sightings to Dr. Jack Musick, VIMS, Gloucester Point, Va. 23062, providing date and location of sightings. Sightings may be reported by phone to VIMS, (804) 642-2111 or 642-2311. The reports may also be called to any local U.S. Fish and Wildlife Service or National Marine Fisheries Service Office.

Virginia Wildlife

BY SUBSCRIBING TO VIRGINIA WILDLIFE, YOU SAVE 50% OFF THE NEWSSTAND PRICE! SEND YOUR CHECK OR MONEY ORDER TO:

Virginia Wildlife
P.O. Box 11104
Richmond, Virginia 23230

$5.00 FOR 1 YEAR OR $12.50 FOR 3 YEARS

Name _____ New _____

Address _____ Renewal _____

City _____ State _____ Zip _____

Allow 6-8 weeks for delivery. Credit Warden No. _____

On The Waterfront

EDITED BY JIM KERRICK

Vacation Tips For Boat Owners

Vacation time, to millions of Americans, means an endless procession of Interstate road markers, semis and fast food restaurants.

To an increasing number of boat owners, however, vacation means exploring new waterways, fishing, or swimming in a quiet cove or dining shoreside in the setting sun.

Boaters' vacation preferences fall into two general categories: the boat-only trip on a single large waterway, or on a network of smaller ones; and the trailer boat variety overland to one or more distant waterways.

Size of boat, type of waterway and personal preference will dictate whether you sleep aboard, camp ashore or check into a shoreside hotel or motel. The same factors govern meals, but few vacationing boaters can resist the temptation to try at least one cookout on a quiet beach.

OBC advises those taking their first vacation by boat to allow at least a couple extra days for bad weather, especially if the trip is in coastal waters or on the Great Lakes. A "float plan" —your estimate of when you'll be where — should be given to a friend, the local authorities or the Coast Guard, especially on bluewater trips.

Informality reigns along our waterfronts, so you can probably get by with less clothing than you'd normally take on a land-bound vacation. Instead, make sure you have enough tools, a first aid kit, recommended and required safety equipment, spare parts, and suntan lotion. If your trip involves open water, get navigation charts of the area you'll be covering and take along rainwear, signal flares and a sea anchor, just in case. Sailors, of course, should carry at least one spare sail or a sail repair kit.

Waterways aren't as crowded as highways, but they don't usually have as many facilities, either. Before you start, find out what's ahead in the way of gas docks, overnight moorings and supply stores. Waterways information is easy to come by, via commercially-published almanacs, oil company maps or state publications.

OBC publishes lists of the materials available and how to get them. The lists, in six regional editions covering Canada and the northeastern, north central, southeastern, south central and western states, may be obtained free by writing: Sources of Waterways Information, Outboard Boating Club, 401 N. Michigan Ave., Chicago, Ill., 60611.

Pier Protection

The best way to handle an accident is not to let it happen. With that in mind, just how safe is your dock area? If there's a lot of water topside to make the surface slick, warn the people. A simple sign obviously posted will do a great deal to avoid accidents. Not only will it be of great help to your visitors or anyone else around. . . it could also be of great help to you if an accident should occur on your property if you did all you could to prevent it. For everyone's sake. . . post the dock with sign warnings.

In Nature's Garden

BY ELIZABETH MURRAY

Coral-Honeysuckle

My mother is an experienced and skilful gardener, and when she asked to weed for me on her first visit from England, I readily assented. At the end of the morning, she came happily in to lunch. "I've cleared all around that lovely honeysuckle and really left it room to breathe," she announced proudly. I groaned sadly, for the only honeysuckle in my yard is *Lonicera japonica*, the infamous Japanese honeysuckle. Misguidedly introduced from Japan as an ornamental many years ago, it is now one of our worst pests, shading and strangling native vegetation, spreading everywhere and only very occasionally justified by its fragrant flowers.

Had my mother found in my yard her own native English honeysuckle, *Lonicera periclymenum*, with its huge sweet-smelling flowers and tractable growth habits, I should have been content. But this species is only found on this continent as an escape from cultivation in the far north-east. And if it had been our own native coral-honeysuckle, I should have been delighted. *Lonicera sempervirens* is a beautiful vine with smooth, twining stems, shiny, opposite, evergreen leaves and brilliant, coral-colored, trumpet-shaped flowers up to two inches long. There are five lobes to the corolla, and five yellow stamens inserted on the tube and projecting a little way beyond it. The flower blooms in early to mid-summer.

Although I do not have coral-honeysuckle in my yard, it does occur in the Piedmont, and also in the Coastal Plain, growing in clearings and along the edges of deciduous woods, often in quite damp habitats. I first saw it along one of the tracks that leads into Lake Drummond in the Dismal Swamp.

Honeysuckles belong in the Caprifoliaceae, a family that includes the viburnums, elders, twinflower and snowberry. All members of the family have opposite leaves and many of them are shrubs or vines, mainly inhabitating the temperate regions of the world. There are more than a dozen species of native honeysuckle in the east of America in addition to several hybrids and other species which have been introduced from Europe and Asia and become naturalized.

In New England, the berries of the swamp fly-honeysuckle, *Lonicera villosa*, can be eaten when they ripen to a dark blue rather early in the summer for berries (before blueberries). And although it is hard to make a large meal from honeysuckle, I have always been in the habit of picking any piece of blooming *Lonicera* and sucking it for the nectar at the base of the flowers.

It seems a pity that the menace of the Japanese honeysuckle has given the group such a bad name. For nearly all honeysuckles have attractive flowers, and the coral-honeysuckle is the most brilliant of them.

Illustrated by Lucile Walton

JOHN W TAYLOR

BY JOHN W. TAYLOR

The Yellow Warbler

In North America live more than fifty species of the family Parulidae, the wood warblers. Most of them are not familiar birds, nesting in deep woods or in heavy cover, and avoiding urban and cultivated land. Though many are brightly colored, they remain inconspicuous, hidden amid the foliage, with only soft, lisping voices to announce them.

But the yellow warbler is an exception. In rural settings, it adapts well to garden shrubbery and fruit trees and, resplendent in golden yellow, is soon noticed about the farmyard and in small towns and villages.

Few people, however, know it by its proper name. To many it is simply a "wild canary" because of its yellow plumage. Yet it does not sing at all like a canary, and does not even belong to the same bird family. (The goldfinch is, more appropriately, a "wild canary.")

Others call it the summer yellow bird, describing it quite accurately, though not indicating its family connections. It is indeed a bird of summer, arriving with the apple blossoms in May, and departing weeks before Autumn begins. By late July many of these warblers have already begun the journey south, reaching Central and South America while its home nesting grounds are still searing with August heat.

And yellow it certainly is, perhaps the most striking yellow of any North American species. The upper parts are washed with olive green, but even here the yellow seems to shine through as if from some inner glow. Faint streaks of rusty red show on the breast, but are noticeable only at close range. The female is similar, but of paler hue.

The song has the ring and cadence like that of many others of the warbler tribe. In fact, it is not always easy to distinguish it. (Individuals with aberrant voices can really be confusing.) But the male is a persistent singer, and the listener soon learns the characteristic *tsee, tsee, tsee, tsiseeweesee*, with a rising inflection at the end. One observer, who had plenty of time and patience, watched one male that sang 3,240 times in one day.

Such continual singing is not unusual during courtship and while the nest is under construction by the female. Sometimes he stops to offer nesting material, but the bulk of the work is done by his lady.

And a beautiful job she does, too. Thin fibers, carefully stripped from grasses and shrubs, are skillfully woven with plant down (from fern fronds) and strengthened with caterpillar webs. Incorporated in some nests is what seems to be the silky webs of spiders. Lichens are sometimes used on the outside, lending a soft, silvery effect to the dainty little pocket.

Sometimes nests of this warbler have two or three stories. Maybe even more. These have been victimized by the cowbird, which builds no nest of its own, and lays its eggs in whatever nest is available. Most host species tolerate the strange eggs, and raise the youngsters as if they were their own, but the yellow warbler often builds another nest on top of the unwanted eggs.

Quite frequently the yellow warbler nests in a willow tree, usually along a river or stream. The bird shows an unfailing affinity with the willow, a trait consistent throughout its wide breeding range, which includes all of North America, from Alaska down through Mexico. It winters from lower California south through Central America to Brazil and Peru.

As would be expected, such a wide-ranging species shows considerable variation in color. So the taxonomists have been able to separate as many as eight subspecies, most of which cannot be recognized in the field.

Our Virginia species, the eastern yellow warbler, is common in every county, avoiding only the higher altitudes in the Alleghenies. Its status seems to have changed little since colonial times; it was one of the species Mark Catesby observed at Williamsburg, and it may have been what Thomas Jefferson listed as "the yellow titmouse."

The scientific name, *Dendroica petechia* may be translated as "tree dweller with red spots." *Dendroica* is coined from the Greek *dendron* tree, and *bikeo*, to dwell or inhabit. *Petechia* is Latin for red spots or markings.

The Sportsman's Calendar is Back

There must be some reason why our calendar sold out last year long before we stopped receiving orders. We think it could be the 12 beautiful prints suitable for framing . . . or the hunting and fishing season information . . . or the daily key to the best times to hunt and fish . . . or the tide information for each day in the year . . . or the sunrise and sunset times for every day. Maybe it was the information for the naturalist such as the bird migration and nesting times, fall leaf coloration peaks, hibernation and mating times . . . we could go on and on.

Together all these features make a calendar that can't be topped anywhere . . . for any price. If you aren't convinced ask someone who had the calendar last year!

The **Sportsman's Calendar** begins with September, 1979 and ends with August, 1980, to correspond with your outdoor activities year . . . so there isn't much time!

Send your check today so you can be absolutely sure not to miss out!

NAME_____

ADDRESS_____

CITY_____ STATE_____ ZIP_____

I would like ____ **Sportsman's Calendar(s)** at $2.00 each.

Amount Enclosed _____

Make checks payable to Treasurer of Virginia and enclose with your order. Calendars will be shipped postpaid in late July, 1979. Send your check and order form to: Sportsman's Calendar, P.O. Box 11104, Richmond, Virginia 23230.